CALIFORNIA
ENERGY
COMMISSION

Annual Project Activity Report to the Legislature

RENEWABLE ENERGY PROGRAM

CALIFORNIA ENERGY COMMISSION

COMMITTEE REPORT

DECEMBER 2003
500-03-103F

Arnold Schwarzenegger, *Governor*

Annual Project Activity Report to the Legislature

CALIFORNIA ENERGY COMMISSION

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Introduction

The Energy Commission is pleased to submit its fifth *Annual Project Activity Report to the Legislature*. The *Supplemental Report of the 1999 Budget Act (*Item 3360-001-0381) requires the California Energy Commission (Energy Commission), beginning March 1, 2000 and by each December 1st thereafter, to submit a report to the Legislature on the Renewable Energy Program. The report shall include the following:

> (a) an itemized list – including a project description, grant amount, and proposed outcome measures – for projects awarded funding in the current fiscal year (FY), broken down by program area; and (b) an itemized list – including a project description, grant amount, and actual outcome measures – for projects awarded funding in the prior FY, broken down by program area.

The Energy Commission established the reporting period and level of detail covered in this report in consultation with the staff of the Legislative Analyst's Office and members of the California Legislature. As mandated, this report discusses the activities performed, funds encumbered, and payments awarded to projects participating in the Energy Commission's Renewable Energy Program from July 2002 to June 2003, with reference to FY 2001-2002 for context and comparison as appropriate.

The remainder of this introduction is organized as follows:

- Summary of Legislative Mandates
- Recent Legislative Changes to the Renewable Energy Program
- Current Status of the Renewable Energy Program
- Report Organization

Summary of Legislative Mandates

This section summarizes the legislation authorizing the Energy Commission to implement the Renewable Energy Program, beginning with the legislation mandating the program in 1996, followed by the most recent legislative changes to the program from 2000 to the present.

The Renewable Energy Program was initially authorized through Assembly Bill 1890 (AB 1890, Brulte, Chapter 854, Statutes of 1996). AB 1890 required California's three major investor-owned utilities (IOUs) to collect $540 million from their ratepayers over a four-year period beginning in 1998 to help support renewable electricity-generation technologies and develop a renewable energy market in California.

As mandated by AB 1890, the Energy Commission submitted its *Policy Report on AB 1890 Renewables Funding* (*Policy Report)*[1] to the Legislature in March 1997, with recommendations for allocating and distributing these funds. The *Policy Report* was

incorporated into Senate Bill 90 (SB 90, Sher, Chapter 905, Statutes of 1997), which directed the Energy Commission to:

> …assist the in-state operation and development of existing and new and emerging renewable resource technologies, and secure for the state the environmental, economic, and reliability benefits that development and continued operation of those new and emerging technology resource facilities will provide.

Senate Bill 90 established the Renewable Resource Trust Fund and charged the Energy Commission with distributing the funds through four distinct accounts as follows:

- Existing Renewable Resources Account
- New Renewable Resources Account
- Emerging Renewable Resources Account
- Consumer-Side Account (the Consumer-Side Account was bifurcated into two sub-accounts: Customer Credit and Consumer Education)

In response to these directives, the Renewable Energy Program became operational in April 1998. The Renewable Energy Program was originally comprised of the above accounts, each fashioned to support the renewables industry in a unique way. Legislative changes since that time that affected the program are discussed below.

Recent Legislative Changes to the Renewable Energy Program

In recent years, the Legislature passed several key bills that significantly affected the Renewable Energy Program.

In September 2000, the Legislature adopted the Reliable Electric Service Investments Act (RESIA) through the codification of Assembly Bill 995 (AB 995, Wright, Chapter 1051, Statutes of 2000) and Senate Bill 1194 (SB 1194, Sher, Chapter 1050, Statutes of 2000). The RESIA directed, beginning in January 2002, that the three large IOUs collect an amount starting at $135 million per year from their ratepayers and place these funds into the Renewable Resource Trust Fund.

In June 2001, in line with the RESIA, the Energy Commission recommended funding allocations and awards to the Legislature in a report titled, *Investing in Renewable Electricity Generation in California (Investment Plan)*[2]. The *Investment Plan* was incorporated into Senate Bill 1038 (SB 1038, Sher, Chapter 515, Statutes of 2002). SB 1038 authorized the Energy Commission to continue implementing the Renewable Energy Program and to distribute the Renewable Resource Trust Fund monies collected under the RESIA, beginning in 2003.

Senate Bill 1078 (SB 1078, Sher, Chapter 516, Statutes of 2002) established a Renewables Portfolio Standard (RPS) in California. SB 1078 requires retail sellers of electricity to increase their procurement of eligible renewable energy resources by at least one percent per year so that 20 percent of their retail sales are procured from eligible renewable energy resources by 2017.

As mandated by SB 1078, the Energy Commission is developing eligibility requirements for certifying renewable facilities, creating a system for tracking renewables purchases and sales, and constructing systems to verify utility procurement compliance and cover the above-market cost for renewables purchases. The Energy Commission is collaborating with the California Public Utilities Commission (CPUC) and other agencies to implement the RPS Program, and when it becomes operational, RPS expenditures will be included in this report. Details on the RPS Program are provided in Chapter 1 of this report.

Although SB 1038 and SB 1078 changed how funds are allocated, they retained the program's structure and most of its funding mechanisms (with some modifications) as follows:

- The Existing Renewable Facilities Program continues to offer financial incentives to support existing renewable facilities through a system of varying incentive amounts based on the market competitiveness of the eligible renewable technologies in the state.

- The New Renewables Program continues to provide funding support to encourage new renewable electricity generation projects most likely to become competitive with conventional technologies. Once on-line, participating projects receive payments for their first five years of generation. The New Renewables Program will also provide funding, termed "Supplemental Energy Payments," to renewable generators for their above-market costs of meeting the RPS requirements, if funds are available.

- The Emerging Renewables Program continues to grant capital cost rebates to assist customers who purchase and install eligible renewable technologies for on-site generation. Increased sales encourage manufacturers and retailers to expand operations, and in turn should lower costs to consumers.

- Customer Credit incentives allowed renewable providers to offer electricity products to their customers at prices competitive with conventional electricity products. In April 2003, the Energy Commission discontinued this program and reallocated the annual Customer Credit funding to the Consumer Education, Emerging Renewables and the New Renewables Programs (10 percent, 45 percent, and 45 percent respectively). The portion reallocated to Consumer Education is specifically earmarked for developing the RPS verification and tracking system.

- The Consumer Education Program increases public awareness of renewable energy and its benefits, and encourages support of renewable energy and purchases of renewable energy technologies through public outreach, leveraging partnerships, and technology demonstration.

In February 2003, the Energy Commission adopted new program guidelines for the Existing Renewable Facilities, Emerging Renewables, and Consumer Education programs. As the RPS rules develop, the Energy Commission will update program guidelines for the New Renewables Program.

SB 1038 required the Energy Commission to evaluate how to utilize the Customer Credit funds most effectively, and, in light of recent market changes, recommend whether the program should be continued. In April 2003, in response to this requirement, the Energy Commission discontinued the Customer Credit program, while it authorized payments to providers for eligible 2002 and early 2003 activity. To permit these payments, the Energy Commission adopted guidelines for the Customer Credit Program in May 2003. Chapter 6 discusses the Customer Credit Program in greater detail.

The next section provides the current status of the Renewable Energy Program, highlighting its accomplishments thus far and showing a snapshot of the status of the Renewable Resource Trust Fund.

Current Status of the Renewable Energy Program

Renewable Resource Trust Fund monies not awarded during the initial Renewable Energy Program's implementation are available for distribution under the extended program in line with SB 1038 and SB 1078. From 1997 to June 30, 2003, $756 million[3] was deposited into the Renewable Resource Trust Fund. By the end of FY 2002-2003, the Energy Commission disbursed a total of $344.2 million, reflecting cumulative payments to program participants. Over $237.9 million is encumbered for projects in progress, with over $167 million in reserve to meet statutory requirements.[4] Funds disbursed by program are summarized below:

- The Existing Facilities Program helped 275 existing renewable facilities remain competitive or return to service with over $173.4 million in funding, representing 4,400 MW of renewables capacity.

- Over $25.7 million has been disbursed to 35 projects from the New Renewables Program, with $170.1 million encumbered for planned additional new renewable projects. Forty projects are online with 259 MW of capacity. When completed, winning projects from the New Renewables Program auctions will bring 1,200 MW of renewables capacity to California’s electricity grid. We anticipate many thousands more MW to come on-line over the next several years as the RPS program matures.

- Photovoltaic (PV) and wind energy systems installed on over 5,300 homes and businesses are providing over 20 MW of capacity, with more than nine MW in various stages of construction. The Emerging Renewables Program provided rebates totaling over $82.0 million with an additional $36.7 million encumbered for over 2,000 additional systems.

- Among customers who entered into direct access contracts with alternative providers nearly 100 percent made renewable electricity purchases and were provided customer credits. The Customer Credit Program supported over 200,000 customer purchases of renewable electricity, with funds totaling over $58.8 million.

- Consumers statewide have received information about renewable energy and its benefits via public service announcements (PSAs), events, radio and television, newspaper, and magazine articles. The Consumer Education Program has provided funds totaling $4.2 million for 12 completed consumer outreach grants, two consumer education contracts, and eight currently-active grant projects.

Over the duration of the program, the Energy Commission has reallocated funds in the Renewable Resource Trust Fund among its individual programs in a manner consistent with SB 90, SB 1038 and the Energy Commission's *Policy Report.*[5] Table 1 shows the annual amount of funds collected to administer the Renewable Energy Program, the allocation among its programs under SB 1038, and the reallocation of funds collected for Customer Credit to the New Renewables, Emerging Renewables, and Consumer Education Programs.

Table 1 - Renewable Resource Trust Fund
SB 1038 Annual Allocations and Customer Credit Reallocations

	SB 1038 Allocations		Customer Credit Reallocations	
Program	**Percent of Total**	**$Million/Year**	**Percent of Total**	**$Million/Year**
New Renewables	51.5	$69.525	56.0	$75.60
Existing Renewable Facilities	20.0	$27.000	20.0	$27.00
Consumer Education	1.0	$1.350	2.0	$2.70
Emerging Renewables	17.5	$23.625	22.0	$29.70
Customer Credit	10.0	$13.500	0.0	0.00
TOTAL	100%	$135.000	100%	$135.00

Report Organization

The remainder of this report is organized into six chapters corresponding to the Renewable Energy Program elements as follows:

- Chapter 1 covers the Renewable Portfolio Standard Program
- Chapter 2 covers the New Renewable Resources Program
- Chapter 3 covers the Existing Renewable Facilities Program
- Chapter 4 covers the Consumer Education Program
- Chapter 5 covers the Emerging Renewables Program
- Chapter 6 covers the Customer Credit Program

Each chapter provides a program overview and covers its significant activities and events occurring in the 12 months of FY 2002-2003, including information regarding funds encumbered or awarded to participating projects. Program information during the previous FY (July 2001 through June 2002) is provided where appropriate.

Maps follow the Endnotes section, and provide project-specific details to date for each program by Senate and Assembly districts. To keep printing costs to a minimum, the project-specific details are provided in the Annual Project Activity Report Appendix on the Energy Commission's website at [www.energy.ca.gov/renewables/documents][6]. The *Annual Project Activity Report on the Renewa*ble *Energy Program Appendix* is also available in hardcopy by calling (800) 555-7794.

Chapter 1
RENEWABLES PORTFOLIO STANDARD PROGRAM

This chapter discusses the Renewables Portfolio Standard Program, covering significant activities during FY 2002-2003, and is arranged into the following sections:

- Overview
- Energy Commission and CPUC Collaboration
- RPS Procurement Process for IOUs
- RPS Public Proceedings in FY 2002-2003

Overview

On September 12, 2002, the Governor signed SB 1078, creating California's Renewables Portfolio Standard (RPS). California's RPS requires retail sellers of electricity to increase their procurement of eligible renewable energy resources by at least one percent per year so that 20 percent of their retail sales are procured from eligible renewable energy resources by 2017. The RPS applies to statewide IOUs, Community Choice Aggregators (CCAs), Electric Service Providers (ESPs), and municipal utilities, although municipal utilities will implement the RPS under their own authorities.

In the spring of 2003, the California Public Utilities Commission, the Energy Commission, and the California Power Authority adopted the Energy Action Plan[7] which accelerates meeting the 20 percent target to year 2010, seven years earlier than the RPS requires.

The following provides an overview of how the CPUC and the Energy Commission are working collaboratively to implement the RPS, how the program will work, and the progress made during FY 2002-2003 in developing the implementation rules.

Energy Commission and CPUC Collaboration

SB 1078 directs the CPUC and Energy Commission to work together and consult each other in developing the RPS implementation rules. Each agency has key roles that are intertwined.[8] The success of the RPS program depends on the joint success of the agencies.

In October 2002, the staff of both agencies began meeting weekly to begin developing the basic framework for their collaboration. The staff identified the issues needed to implement the RPS, the lead agency for each issue, and the recommended process or forum for

addressing these issues. The proposal of recommendations, which became the basis of the collaborative staff's work-plan, was presented to the Governor's Office in December 2002.

In December 2002, the CPUC issued a ruling announcing that the CPUC and the Energy Commission staff would work collaboratively to develop RPS implementation rules (Decision 02-12-074). This ruling granted the Energy Commission staff special status for RPS deliberations, with the same access to decision-makers as the CPUC staff.[9]

In February 2003, the CPUC Administrative Law Judge (ALJ) issued a ruling formalizing the legal framework and communication protocols governing the conduct of collaborative staff. From this ruling, the ALJ also issued the document entitled*, Workplan: CPUC-CEC RPS Collaboration (Workplan),* laying out a three-phased plan the two agencies to develop rules for implementing the RPS. Figure 1 illustrates the activities within each phase showing the agency with lead authority and the relative due dates for each phase.

The Energy Commission began a reciprocal process to formalize the collaboration in areas where it has decision-making responsibility. In March 2003, the Energy Commission approved an order delegating authority to the Renewables Committee (Committee) to do the following:

1. Initiate a multi-phased RPS proceeding to address the issues identified in the *Workplan*.

2. Establish collaborative guidelines to facilitate the participation of CPUC staff in the Energy Commission's RPS proceeding, consistent with the CPUC's guidelines for the Energy Commission to participate in the CPUC Procurement Rulemaking proceeding.

3. Take all actions necessary and appropriate to develop proposed decisions, policies, guidelines, and regulations to address the issues identified in the *Workplan*.

The CPUC and Energy Commission continue to work in close consultation in conjunction with the guidelines and the *Workplan*. The lead decision-making authority is divided between the two agencies as follows:

The Energy Commission has lead-decision authority for:

- Determining eligibility of out-of-state power,
- Defining eligible renewable technologies,
- Determining incremental geothermal generation,
- Certifying renewable electricity generation facilities,
- Developing guidelines for supplemental energy payments, and
- Creating an RPS accounting system.

The CPUC has lead-decision authority for:

- Setting renewable generation baseline and annual procurement targets,
- Developing flexible compliance and penalty mechanisms,

- Developing standard contract terms and conditions,
- Setting market price referents, and
- Developing least cost and best fit bid ranking criteria.

A timeline showing key activities for each agency is provided in Appendix A in the *Annual Project Activity Report on the Renewable Energy Program* on the Energy Commission's website at [www.energy.ca.gov/renewables/documents].

Before discussing the steps the two agencies have taken to develop RPS implementation rules, a sketch of the overall procurement process that IOUs will follow to comply with RPS requirements is provided below.

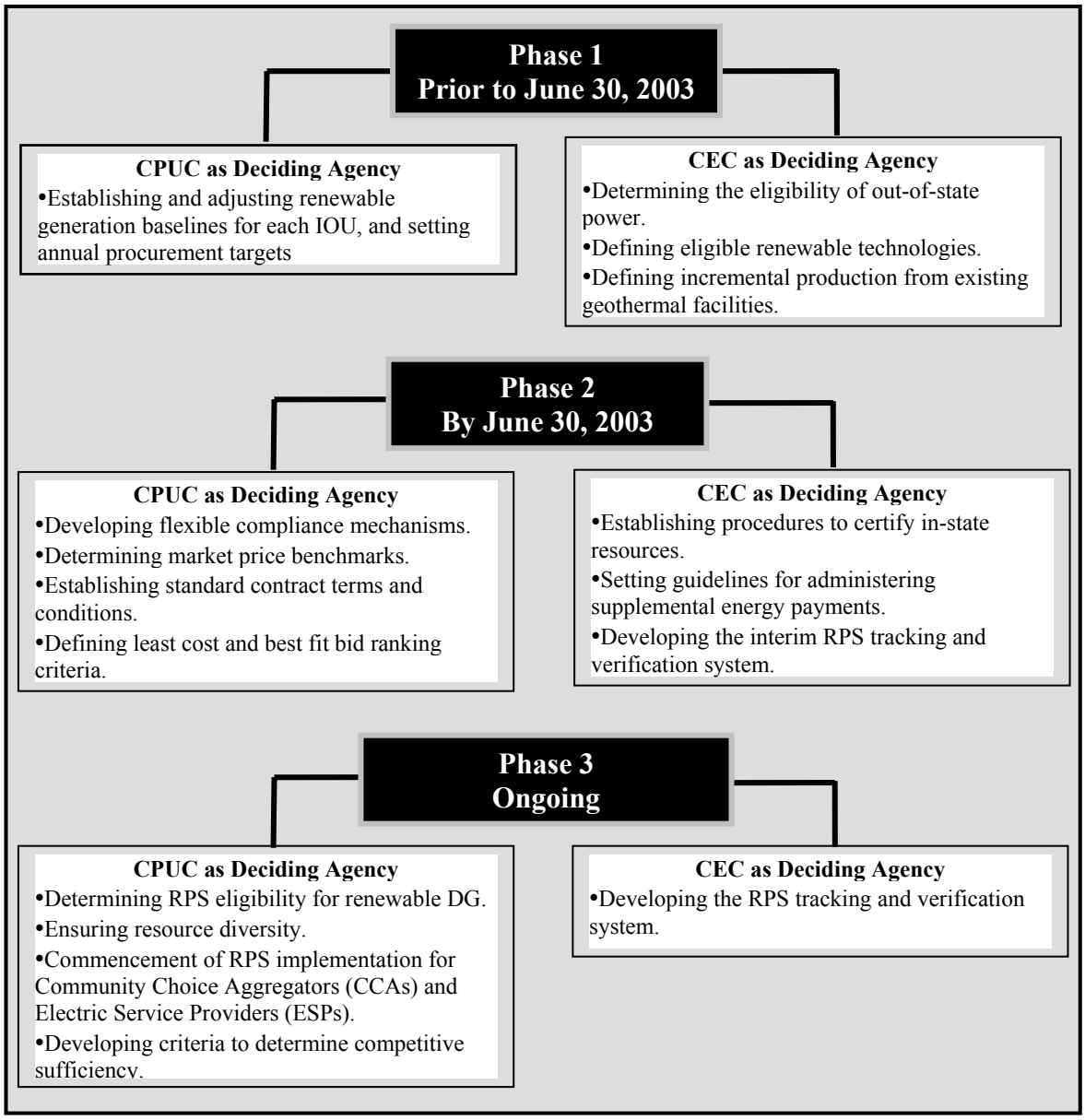
RPS Procurement Process for IOUs

Initially, the CPUC will set an annual procurement target for the amount of renewable energy the utilities need to procure. For the IOUs, compliance begins when they submit a renewable procurement plan to the CPUC describing how they will meet their annual procurement targets. This plan will describe how the IOU will meet its annual procurement target of at least one percent per year over the baseline amount of renewable resources in its portfolio in year 2001. The CPUC then reviews and ultimately approves the plan. Once the IOU is creditworthy, it would issue a solicitation to procure renewables, consistent with its approved plan.

The IOU's solicitation for renewable electricity must offer CPUC-approved standardized contracts for a range of renewable electricity products for a contract term of at least 10 years, unless the CPUC makes allowances for shorter terms. Bids received in response to the solicitation are to be ranked by the utility according to "least cost" and "best fit" for the IOUs' long-term resource needs. The law allows the CPUC to build in flexible compliance and penalty mechanisms.

The costs of the proposed contracts are then compared to a market price referent for each approved product. The market price referent is an estimate of the amount that the IOUs would pay for each energy type if they were not purchasing renewable power. To avoid biasing bid results, the CPUC will independently determine the price referent, and reveal it only after bids have been submitted. Under the RPS, electricity suppliers are not required to purchase renewable energy at a price over the relevant market price referent. Approved contract costs above these referents will be covered by the Public Goods Charge (PGC), administered by the Energy Commission in the form of Supplemental Energy Payments (SEPs), subject to fund availability. If PGC funds are insufficient or unavailable to cover the above-market costs, a utility can limit its annual procurement to that quantity of eligible energy that can be procured with available SEPs.

Figure 1 - RPS Implementation



Much of the process outline above is carried out under CPUC direction, but the Energy Commission also has key roles in the RPS procurement process. The Energy Commission is responsible for:

1) Certifying facilities as renewable energy resources eligible for the RPS or SEPs. This work will largely be conducted through the New Renewable Resources and the Existing Renewable Facilities Programs.

2) Establishing criteria for "incremental" output from existing geothermal facilities. This determination distinguishes between generation from geothermal resources that can be counted towards the baseline amount of renewable resources, and resources that can be procured to meet the annual procurement targets.

3) Designing and implementing an accounting system to verify retail sellers' compliance with the RPS and verifying that generation is counted only once in California or any other state.

4) Allocating and awarding SEPs as specified in SB 1038 to eligible renewable energy resources to cover above-market costs of renewable energy.

RPS Public Proceedings in FY 2002-2003

This section describes the progress of the joint efforts made by the two agencies in FY 2002-2003 in developing the RPS implementation rules, showing activities led by the Energy Commission followed by those led by the CPUC.

In FY 2002-2003, the Energy Commission and the CPUC began establishing the RPS implementation rules that apply to the three large IOUs, Pacific Gas and Electric, San Diego Gas and Electric, and Southern California Edison. Electricity Service Providers and Community Choice Aggregators are also subject to the RPS, and the two agencies will develop RPS implementation rules for these entities during the next FY.

Energy Commission-Led Activities

The Energy Commission and CPUC are developing rules to implement the RPS through a phased approach. The Energy Commission is the lead on the following Phase 1 issues:

- Describing RPS eligibility for renewable generating facilities
- Identifying incremental geothermal generation, and
- Determining eligibility of out-of-state power.

Phase 2 issues address the rules for distributing SEPs and developing a tracking and accounting system. The Energy Commission is addressing these issues through policy decisions, to be implemented through guidelines or regulations, as appropriate.

On March 25, 2003, the Energy Commission held a collaborative staff workshop to solicit input from stakeholders on Phase 1 issues. The workshop topics included defining eligible resources, determining what constitutes incremental geothermal, and deciding whether and to what extent out-of-state power should be eligible.

On April 25, 2003, the Committee issued a preliminary draft Decision on Phase 1 Implementation Issues that incorporated written and oral comments received at the staff

workshop. The Committee then held a hearing on May 5, 2003 to receive public comments on the preliminary draft report. The Committee subsequently released a final report on Phase 1 implementation issues based on oral and written comments received, and on the expertise of collaborative staff and technical support contractors.

The *Renewables Portfolio Standard: Decision on Phase 1 Implementation Issues*[10] was adopted at the Energy Commission's regularly scheduled Business Meeting on June 11, 2003. The decisions contained in this report, summarized below, will be implemented through guidelines on Phase 2 issues, specifically certification of renewable energy resources and distribution of supplemental energy payments.

Eligible Renewable Technologies

As cited in the Energy Commission's RPS Phase 1 decision, California Public Utilities Code section 383.5(b)(1) defines an "in-state renewable electricity generation technology" as follows:

> The facility uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and any additions or enhancements to the facility using that technology.[11]

To implement the RPS, the Energy Commission clarified definitions regarding small hydroelectric generation, biomass, municipal solid waste, and hybrid technologies as follows:

- Small Hydro: by statute, a new small hydro facility seeking RPS and/or SEP eligibility may not cause a new or increased appropriation or diversion of water.

- Biomass: the statutes specify various criteria for fuel used at new biomass facilities. New biomass facilities must self-certify, under penalty of perjury, that the fuel used for their facilities meets the criteria in SB 1038.

- Municipal Solid Waste Combustion: MSW combustion facilities are eligible for the purpose of adjusting a retail seller's baseline, provided that the facility's combustion, control, and generation equipment are located wholly within the boundaries of Stanislaus County, and that the facility began operating before September 26, 1996.

- MSW Facilities Using an Eligible Solid-Waste-Conversion Technology to gasify or convert MSW into a clean-burning fuel before combustion are eligible for meeting a retail seller's annual procurement targets and may qualify for SEPs.

- Biodiesel-The electricity produced from the combustion of biodiesel is eligible for the RPS if it is derived from either 1) a biomass feedstock such as 'agricultural crops and agricultural wastes and residues' and consists of no more than 25 percent fossil fuel, or 2) an eligible 'solid waste conversion' process of MSW.

A renewable facility may be eligible for the RPS if it uses up to, but not more than, 25 percent fossil fuel, which is consistent with eligibility requirements in the Energy Commission's Renewable Energy Program. Under this program, the percentage of fossil fuel used may not exceed 25 percent of the total energy input of the facility during a given calendar year.

The Energy Commission will consult with appropriate agencies to develop fuel specific criteria as necessary.

Incremental Geothermal Generation

According to the Phase 1 decision, incremental geothermal generation is eligible for RPS if it is a product of eligible capital expenditures, which must reflect all of the following:

1. It is a substantial capital project, resulting in replacement of generating equipment or increase in steam converted to generation at a facility;

2. Causes a sustainable impact on the underlying reservoir use; that is, a project does not cause an increase in the decline rate of the reservoir; and

3. Has a capital project completion date after September 26, 1996.

Examples of eligible capital expenditures at a facility are re-powering or refurbishing generating equipment, or using the geothermal energy more effectively to increase generation, such as adding a binary bottoming cycle. An example of an eligible capital expenditure at a steamfield is increasing production from the steamfield through increased water injection.

Out-of-State Power

Through its adoption of the Phase 1 Report, the Energy Commission defined the eligibility requirements for renewable resources that IOUs can purchase to meet the RPS. Eligible renewable generators located out-of-state can deliver electricity to California to satisfy RPS purchase requirements and receive SEPs provided that it meets one of the following conditions:

1. It is located near the border of the state with the first point of interconnection to the Western Electricity Coordinating Council (WECC) transmission system located within California; or

2. It meets the eligibility criteria for supplemental energy payments in that the facility is located so that it is or will be connected to the WECC transmission system, and is developed with guaranteed contracts to sell its generation to end-use customers located in California IOU service territories while it receives SEPs.

In May, 2003 the Energy Commission began addressing Phase 2 Implementation Issues. The collaborative staff held workshops on May 12 and 13, 2003 to discuss the following issues:

- Allocating and awarding SEPs;

- Developing a process to certify in-state resources; and
- Developing an RPS tracking and verification system.

On April 25, 2003, the Western Governors' Association (WGA) held a scoping meeting on establishing a Renewable Energy Tracking and Certificates (RETAC) working group. The WGA and the Energy Commission have established a collaborative relationship with the goal of developing a Western Renewable Energy Generation Information System (WREGIS). Activities to implement the development of the WREGIS began in the fall of 2003.

The *Preliminary Committee Draft Renewables Portfolio Standard: Decision on Phase 2 Implementation Issues,*[12] which was based on oral and written comments and the expertise of collaborative staff and technical support contractors, was released for public comment on June 30, 2003. Although occurring beyond the end of this FY, we note that the Energy Commission adopted the final Phase 2 decision report on October 8, 2003.[13] The Energy Commission will begin developing guidelines to implement the Phase 1 and 2 decisions during the next fiscal year. Phase 3 decisions are ongoing.

CPUC-Led Activities

During this reporting period, the CPUC initiated the following activities on which the agencies collaborated:

- Developing Flexible Compliance and Penalty Mechanisms – the collaborative staff held a workshop on February 25, 2003.

- Determining the Market Price Referents – the collaborative staff held a workshop on March 4, 2003.

- Defining Least Cost and Best Fit and Bid Ranking Criteria – On March 7, 2003, the collaborative staff released a working paper on the topic and on March 18, 2003, held a workshop.

- Establishing Standard Contract Terms and Conditions – the collaborative staff held a workshop on March 11, 2003.

The workshops provided a forum for parties to informally discuss the topics, exchange ideas, and become better informed about the issues. Following the workshops, the collaborative staff prepared workshop reports summarizing the discussions, which were made available to the public.

On March 27, 2003, parties submitted testimony to the CPUC on flexible compliance mechanisms, market price referents, and least-cost-best-fit bid ranking. The CPUC ALJ directed parties to address standard contract terms and conditions under separate supplemental testimony. The expedited process also invited parties to submit rebuttal testimony and briefs in April and May 2003.

In consultation with the Energy Commission, the CPUC adopted rules on June 19, 2003, addressing the following:

1. The process for determining market price referents for electricity from non-renewable sources. The IOUs will hold solicitations to purchase electricity from renewable generators; bids above the referents may be eligible for SEPs from the Energy Commission, subject to PGC fund availability.
2. The process for the IOUs to follow in selecting the "least cost" bidders of renewable energy that "best fit" IOUs' resource needs. The IOUs will use the process to select winning bidders from their solicitations to procure renewable electricity.
3. Flexible rules for compliance with annual procurement targets. If an IOU fails to procure sufficient renewable energy, despite the flexibility of the rules, the CPUC will impose penalties.
4. A process for establishing the standard terms and conditions to be used by all IOUs in contracting for eligible renewable energy resources. Parties will have an opportunity to negotiate terms and conditions during the third quarter of 2003.

A summary of the decisions made by the CPUC during FY 2002-2003 are provided below.

Flexible Compliance and Penalty Mechanisms

The CPUC's June 19, 2003 decision adopted flexible rules for compliance with the RPS that allow the IOUs to receive credit in future years for procuring more than their RPS annual procurement target (APT). In addition, the decision allows an IOU to defer up to 25 percent of its APT from one year without explanation, provided that it is made up within three years. A penalty in the amount of five cents per kilowatt hour, up to $25 million per utility, will be owed for deferred amounts that are past due.

More than 25 percent of an APT may be deferred, provided that one of four conditions is demonstrated by the utility:

1. Insufficient response to request for offers,
2. Contracts already executed will provide future deliveries sufficient to satisfy current year deficits,
3. Inadequate public goods funds to cover above-market renewable contract costs,
4. Seller non-performance (... beyond the control of the utility)."[14]

Standard Contract Terms and Conditions

The CPUC adopted the following standard terms and conditions to be used by all electrical corporations in contracting for eligible renewable energy resources, including performance requirements for renewable generators, as required by SB 1078.

1. Parties must negotiate more detailed standard terms and conditions, with the Edison Electric Institute (EEI) Master Agreement as the basis for the negotiations. The decision also recommends that the following standard terms be incorporated: product definitions, contract term, [California Public Utilities] Commission approval language, supplemental energy payment awards and contingencies, ownership of renewable energy certificates, confidentiality, performance standards, non-performance or termination penalties, scheduling coordination and responsibility for imbalances.

2. The CPUC endorsed the goal of "prompt negotiation to resolve ... a stalemate around re-powering of existing wind facilities ... as the re-powering of existing wind facilities in prime locations is a common-sense approach to increasing procurement of renewable energy, with costs that should be lower than for new greenfield projects."

3. The utilities should seek bids for 10, 15, and 20-year products.

4. Bilateral contracts are allowed only when such contracts do not require any public goods charge (PGC) funds.

Market Price Referents

The CPUC adopted a process for determining market price referents for baseload and peaking renewable electricity products. Under the RPS, obligated electricity suppliers are not required to purchase renewable energy at a price over the relevant market price referent. Instead, the Energy Commission will fund any costs, through SEPs, that are above the market price referent, up to any price cap (yet to be determined). A combined-cycle plant will be used to establish the market price referent for baseload renewable energy products and a combustion turbine will be used as the proxy for establishing the market price referent of peaking products.

The actual market price referent for the first solicitation will not be known until after the bids have been received, as stated in SB 1078. This requirement is intended to increase the incentives for developers to submit competitive bids in the procurement process. As a result of this practice, the portion of each winning bid that is above the market price referent and eligible for SEPs will not be known in advance.

Least Cost and Best Fit Bid Ranking Criteria

The CPUC established criteria for ranking and selecting renewable bids based on two goals: 1) minimizing the cost to ratepayers, and 2) obtaining resources that fit with IOU resource needs. The CPUC defines "best fit" as "the renewable resources that best meet the utility's

energy, capacity, ancillary service and local reliability needs," with the added condition that "for the short-term, renewable generation that can operate as dispatchable or peaker power may possibly fall slightly higher on the 'procurement hierarchy."

Subject to CPUC approval, each IOU will prepare an RPS procurement plan containing information that will allow bidders to develop products to fit each IOU's needs. Costs and benefits to the transmission system, local and system reliability, low income and minority communities, environmental stewardship, and resource diversity will also be considered in selecting winning bids. The RPS procurement for each IOU will be based on its publicly available annual RPS plan.

The collaborative staff will continue on-going efforts to carry out the adopted decisions.

Chapter 2
NEW RENEWABLE RESOURCES PROGRAM

This chapter discusses the New Renewable Resources Program, covering the significant activities during FY 2002-2003. The chapter is arranged into the following sections:

- Overview
- Activities and Status
- Auction Results
- Status of On-Line Projects
- Potential Penalties for On-Line Projects
- Status of Projects Not Yet On-Line
- Funding Award Extensions
- Potential Funding Reallocations

Overview

Senate Bill 90 initially allocated 30 percent of the total collected funds to the New Renewables Program to support new renewable power plants in California. A "new" facility, as defined by SB 90, is one that began generating electricity after September 26, 1996. Under SB 90, funds were allocated to participants through competitive auctions, in which developers of prospective renewable energy projects competed for funding in the form of production incentives paid out over a maximum of five years. The Energy Commission held three auctions, the first in June 1998, the second in November 2000, and the third in September 2001; the results of these are discussed later in this chapter. An overview of the bidding process follows.

Developers bid for the amount of incentive needed to make their project economically feasible to develop, up to a cap of 1.5 cents/kWh. To determine the total conditional award to each project, the Energy Commission multiplies the incentive requested by the bidder's estimate of the amount of energy the project is expected to generate during its first five years of operation.

Auction bids must include proof that the developer controls the site of the proposed project, and a detailed description of the project's size, location, technology, fuel type. Bids must also describe required project permits, what agencies are responsible for granting those permits, and any potential environmental impacts. Finally, bids must include a construction schedule showing the project's expected on-line date.

Bidders who have not yet applied for project permits must demonstrate the seriousness of their project by submitting a bid bond equal to 10 percent of their total proposed award. Once developers have applied for all permits needed to begin project construction, the bid bond is returned.

Bids meeting the minimum eligibility requirements are then ranked from the lowest incentive requested to the highest, and are accepted until all funds are awarded or until all bids are accepted, whichever comes first. If the last accepted bid (or group of bids, in the case of a tie) exceeds the amount of available funds, the bidder is given the choice of receiving a reduced funding award or dropping out of the auction.

Winning bidders must pass a series of project milestones that include applying for and receiving permits, beginning and completing construction, and coming on-line as certified by a professional engineer. Once projects begin generating electricity, the operators submit monthly invoices to the Energy Commission showing the amount of renewable electricity generated, verified by a metering statement from a third-party. The Energy Commission pays each project the amount of its bid multiplied by its monthly generation for the first five years of project operation, but will not pay for more than the original estimated generation contained in the project's bid. In addition, to prevent projects from front-loading their award and to encourage long-term operation, projects can only receive a maximum of 25 percent of their total conditional funding award in each of the first three years of operation.

For additional details on funding and eligibility, see *Volume 2A: New Renewable Resources Account Guidebook*.[15]

SB 1038 extended the New Renewables Program and allocated 51.5 percent of the total funds to foster new renewables development. These funds will be used for SEPs to cover above-market costs of meeting the RPS goals, depending on fund availability. When the RPS program becomes operational, we will report the SEPs in this chapter. For more details about the progress the Energy Commission is making in developing the RPS implementation rules, please refer to Chapter 1 in this report.

Activities and Status

The results of the New Renewables Program auctions and the status of winning projects are discussed below. For descriptions and detailed project information, refer to the *Annual Project Activity Report on the Renewable Energy Program, Appendix B* on the Energy Commission's website at [www.energy.ca.gov/renewables/documents].

Auction Results

The Energy Commission held three auctions beginning in 1998 when the New Renewables Program began. In the first auction in 1998, the Energy Commission awarded the entire $162 million originally allocated to support new renewable generating facilities. In 2000 and 2001,

the Energy Commission held two additional auctions to encourage the development of new renewable generating capacity to help with anticipated peak electricity demand resulting from California's electricity crisis. The additional auctions were funded with $80 million from the Existing Renewable Facilities Program that became available during 2000 and 2001 because of high market prices for electricity and low pay-outs from that account. The second and third auctions encouraged projects to come on-line as quickly as possible by offering bonuses for coming on-line by June 1 and imposing penalties for on-line dates after July 2 of each year respectively.

Table 2 summarizes the winners in the three auctions by technology. The summary does not include ten projects that have cancelled their funding awards. As noted in Table 2, when all winning projects have come on-line, the auctions will have facilitated the development of nearly 1,200 MW of new renewable capacity for California's electricity customers.

Table 2 - Summary of All Winning Bidders

Technology	# of Projects	Capacity (MW)	Average Incentive (¢/kWh)	Conditional Award*
Biomass	2	11.30	$1.35	$3,787,902.00
Digester Gas	1	2.05	1.39	$1,148,209.50
Geothermal	4	156.90	1.28	$80,331,617.60
Landfill Gas	19	55.02	1.17	$22,114,864.99
Small Hydro	5	34.24	1.19	$5,346,223.63
Waste Tire	1	30.00	0.72	$7,232,413.43
Wind	39	976.20	0.74	$107,801,079.90
Total	**71**	**1265.71**	**$0.93**	**$227,762,311.05**

- * The conditional funding awards for winning bidders in the second and third auctions include potential bonuses for early on-line dates and do not reflect potential penalties for later on-line dates. The encumbered balance for these winners will be adjusted downwards once the projects come on-line.

In the second auction, the Energy Commission received 28 bids requesting more than $93 million in incentive funds. There were 17 winning bidders with an average incentive request of 0.59 cents/kWh, well below the 1.5 cent/kWh cap. Winning projects ranged in size from one to 200 MW, and included biomass, landfill gas, small hydro, and wind technologies.

The last four bidders accepted in the second auction submitted tying incentive bids. Auction Rule 9 states that winning bids with equal incentive requests will be grouped and treated as a single bid. If the group of tying bids causes expected total pay-outs to exceed the available funds, the affected bidders are given the option to either withdraw from the auction or have

their awards reduced by the amount necessary to match the available funds. All four bidders chose to accept lowered funding awards that were 25 percent of their original request.

In the third auction, the Energy Commission received 48 bids requesting more than $140 million in incentive funds. The average incentive requested by winning bidders was .75 cents/kWh, once again well below the 1.5 cent/kWh cap. There were nine winning bidders, with projects ranging in size from five to 80 MW. Represented technologies were small hydro, waste tire, and wind. The amount of the final winning bid in the third auction caused expected total payments to exceed the available funds. Therefore, under Rule 9, the final bidder's award was reduced by 27 percent to correspond with the available funds.

Status of On-Line Projects

As of June 30, 2003, over half (59 percent) of the 71 projects with active funding awards are on-line and generating electricity, adding 329 MW of capacity from new renewables to the grid. These 42 projects had winning bids in the first and second auctions. Six of these projects, three landfill gas projects totaling 6 MW and three wind projects totaling 120 MW, came on-line in FY 2002-2003.

In FY 2002-2003, the Energy Commission made payments to 35 on-line projects. Table 3 shows the New Renewables Program's payments from the beginning of the program through June 30, 2003, including those made during FY 2002-2003.

Table 3 - Summary of Total Payments as of June 30, 2003

Technology	MWs On-Line	# of Projects On-Line	% of Total MWs	Payments* FY 02/03	Total Payments To Date*	Total Funds Encumbered	% Of Encumbered Funds Paid
Biomass	11.30	2	100%	$500,312.32	$714,645.67	$3,787,902.00	19%
Digester Gas	2.05	1	0%	0	0	$1,148,209.50	0%
Geothermal	59.00	2	38%	$4,387,406.20	$12,764,434.20	$80,331,617.60	16%
Landfill Gas	37.19	14	68%	$2,019,943.43	$8,253,984.81	$22,114,864.99	37%
Small Hydro	11.25	2	33%	$330,105.51	$340,472.41	$5,346,223.63	6%
Waste Tire	0	0	0%	0	0	$7,232,413.43	0%
Wind	208.10	21	21%	$3,013,180.32	$3,649,500.76	$107,801,079.90	4%
Total	**328.89**	**42**	**26%**	**$10,250,947.78**	**$25,723,037.85**	**$227,762,311.05**	**12%**

* What appears to be a discrepancy between the payment totals from the previous fiscal years' report and totals from FY 02/03 is due to a change in how payments are tracked. In previous reports, these totals were calculated based on the month of generation. At the program auditor's request, the database has been improved so that payments are now tracked by the date a payment is issued.

Seven on-line projects did not receive payments during FY 2002-2003. These projects are summarized in Table 4, along with the reasons for non-payment.

Table 4 - Summary of Unpaid On-Line Projects as of June 30, 2003

Technology	MWs On-Line	# of Projects On-Line	Total Funds Encumbered	Reason for Non-Payment
Digester Gas	2.05	1	$1,148,209.50	Projects owned by utilities are not eligible for funds, and this project is owned by City and County of San Francisco. The staff are investigating whether this entity may be defined as a local publicly-owned electric utility.
Landfill Gas	8.04	4	$2,517,793.72	Three projects have undergone change of ownership and new owners must demonstrate that they meet program eligibility requirements. One project has only brought half of its capacity on-line, and is not eligible for payments until the entire project is on-line.
Wind	111.12	2	$19,148,272.52	One project has undergone a change of ownership and new owner must demonstrate that it meets program eligibility requirements. One project has not yet submitted invoices for payment.
Total	**121.21**	**7**	**$22,814,275.74**	

Potential Award Reductions for On-Line Projects

Award reductions for on-line projects fall into two broad categories: those based on generation and those based on a project's on-line date.

Generation-Based Award Reductions

The auction rules require project developers to estimate the amount of electricity that their projects will generate over the five-year funding period. To discourage auction participants from encumbering excess funds by overestimating their generation, on-line auction winners must generate a minimum of 85 percent of their estimated annual generation over the first three years of operation or face potential reductions to their awards.

If a project developer cannot meet the minimum generation requirements, the developer must notify the Energy Commission. The Energy Commission will then reduce the eligible generation for the project to reflect the average annual amount of energy actually generated by the project during the first three years of operation. Depending on the reason for the under-generation, the Energy Commission may also penalize the project by reducing its cents/kWh incentive by 25 percent for the final two years of payments.

During FY 2002-2003, the Energy Commission reduced the eligible generation for a landfill gas project that did not meet the 85 percent generation requirement. The reason for the under-

generation was that the gas production from the landfill was not as high as originally expected; therefore, the Energy Commission did not impose a penalty on the project's incentive level. Two other landfill gas projects owned by the same developer also under-generated, but after their machinery underwent a complete overhaul, were given until July 1, 2003 to bring their generation back up to acceptable levels.

A wind project owned by Enron Development Corporation also under-generated, but because the company was tied up in bankruptcy proceedings, the Energy Commission was unable to reduce the project's funding award or impose an incentive penalty. Once the bankruptcy proceedings are resolved, the Energy Commission will reevaluate its funding award to determine the necessity for a reduction or penalty.

Two geothermal projects under-generated during the first three years of operation because of problems with their generating equipment, allegedly the fault of the equipment manufacturer. The Energy Commission has asked for information regarding the developer's ability to address the equipment problems and bring the projects' generation up to acceptable levels during the last two years of operation. Once that information is received, the Energy Commission will evaluate the need for award reductions or penalties for these two projects.

The Energy Commission will continue to evaluate the performance of on-line projects and revise funding awards as necessary to reflect any reduced generation amounts or incentive penalties.

On-Line Date Award Reductions

As outlined in the second and third auction rules, the Energy Commission required projects to come on-line by a specific date to be able to receive 100 percent of their funding awards. In the second auction, projects had to come on-line by July 1, 2001 to be fully funded; in the third auction, the deadline to receive a full funding award was July 2, 2002. The Energy Commission reduces conditional funding awards for these projects an increasing amount for each month that elapses between the deadline and the date the project actually begins operation.

The award reductions are applied once projects actually come on-line. During FY 2002-2003, four projects that were winning bidders in the second auction came on-line. These projects will have their awards reduced by 50 percent based on their on-line dates.

Status of Projects Not Yet On-Line

Twenty-nine projects from the three auctions are not yet on-line. Table 5 summarizes the capacities and estimated on-line dates of these projects by FY.

Table 5 - Summary of Projects Not Yet On-Line By Fiscal Year

Technology	FY 03/04		FY 04/05		FY 05/06		FY 06/07		TOTAL	
	#	Size (MW)	#	Size (MW)	#	Size (MW)	#	Size (MW)	#	Size (MW)
Biomass	-	0	-	0	-	-	-	-	-	-
Digester Gas	-	0	-	0	-	-	-	-	-	-
Geothermal	-	0	-	0	-	-	2	97.90	2	97.90
Landfill Gas	1	3.90	2	2.97	2	10.95	-	-	5	17.83
Small Hydro	1	21.00	1	0.99	-	-	1	1.00	3	22.99
Waste Tire	-	-	1	30.00	-	-	-	-	1	30.00
Wind	11	294.45	7	473.65	-	-	-	-	18	768.10
TOTAL	**13**	**319.35**	**11**	507.61	**2**	**10.95**	**3**	**98.90**	**29**	**936.82**

Most of the New Renewables Program projects proceeded on schedule with minimal delays until late 2000, when the investor-owned utilities' financial difficulties began to strain California's electricity market. New renewable electricity generating project developers found it nearly impossible to secure power purchase agreements and many were unable to obtain the financing needed to begin construction or purchase equipment. Further, many local agencies downsized as a result of California's economic downturn, causing developers to face delays in acquiring permits.

California's Renewables Portfolio Standard is expected to help stimulate demand for new renewable technologies by requiring utilities and other obligated entities to buy a minimum percentage of their retail sales from renewable sources. This requirement may increase the availability of power purchase agreements, which should help projects resolve financing issues and make progress toward coming on-line.

Funding Award Extensions

Senate Bill 90 originally required new renewable projects to come on-line before January 2000 to receive their entire funding award over the five-year payment period. Projects coming on-line later than January 1, 2002, risked having their payments reduced, incurring penalties, or having their conditional funding awards cancelled. However, AB 995 and SB 1194 amended the law. Projects participating in the New Renewables Program may now come on-line as late as January 1, 2007, provided that the Energy Commission finds that the delay is beyond project developers' control.

In February 2002, the Energy Commission revised the *Overall Guidelines*[16] to establish a formal petition process for developers applying for funding award extensions. In FY 2002-2003, 18 project developers submitted petitions for extensions because of delays they claim were beyond their control. After the Energy Commission found that project delays were due

to circumstances beyond the developers' control, it granted 17 of these petitions. One petition was denied.

In general, reasons for project delays fell into four categories:

- Inability to secure a power purchase agreement because of the overall uncertainty in California's energy market,
- Delays in getting interconnection to the utility grid,
- Transmission constraints in certain wind resource areas,
- Less-than-expected gas production at various landfill gas facilities.

Although their on-line dates may be extended past December 31, 2002, winning bidders in the second and third auctions are still required to come on-line no later than July 2, 2003 to receive five full years of payments. Projects may be allowed to come on-line later than that date, but will receive fewer than five years of payments and, therefore, less than their full funding awards.

Potential Funding Reallocations

In the second and third auctions, the Energy Commission reduced the funding awards for five projects to match the available auction funds as required by Rule 9. In August 2002, the Energy Commission adopted changes to the New Renewables Program guidelines to give the Energy Commission discretion to reallocate funds from cancellations or award reductions to bidders whose awards were reduced under Rule 9. In February 2003, the Energy Commission approved reallocating approximately $4.3 million to augment the awards of five projects in the second and third auctions whose awards were reduced under Rule 9, restoring the conditional funding awards for these projects to the amount originally bid. The five projects, three landfill gas projects and two small hydro projects, are still subject to having their awards reduced based on their on-line dates, as specified in the rules for the second and third auctions.

Cancellations

Ten projects have cancelled their funding awards, representing 33 MW of capacity and $12.8 million in funding awards. The reasons for these cancellations included:

- Inadequate fuel supplies,
- Inability to secure a power purchase agreement because of the overall uncertainty in California's energy market,
- High operating and maintenance costs,
- Legal challenges,
- High cost of interconnection to the utility grid.

Funding from the first two projects that cancelled was reallocated to the winning bidder in the first auction whose award had been reduced under Rule 9. A portion of the funds from the remaining cancelled projects was reallocated to winning bidders in the second and third auctions whose awards were also reduced under Rule 9. The remaining funds from cancelled projects will be returned to the Renewable Resource Trust Fund for later reallocation.

The Energy Commission's legal staff is still consulting with bankruptcy law experts to determine if the Energy Commission has the ability to cancel three wind projects owned by Enron Wind Development Corporation and one wind project owned by Painted Hills Wind Developers, an Enron affiliate.

Chapter 3
EXISTING RENEWABLE FACILITIES PROGRAM

This chapter discusses the Existing Renewable Facilities Program, covering the significant activities during FY 2002-2003. The chapter is arranged into the following sections:

- Overview
- Activities and Status
- Expenditures

Overview

SB 90 initially allocated 45 percent of the total funds to the Existing Renewable Facilities Program (ERFP) to provide assistance to existing renewable energy facilities in California during the state's transition to a deregulated electricity market. Subsequent legislation has extended the Renewable Energy Program and continued the 20 percent allocation of total funding to the ERFP for eligible generation from 2002 through 2006. An overview of the eligibility requirements for the ERFP follows.

To be eligible for funding from the Existing Account, a facility must meet the following conditions:

- Be physically located within the State of California,
- Have come on-line before September 26, 1996,
- Be registered with the Energy Commission as a renewable supplier (for facilities eligible from 1998-2001, re-register after February 2003), and
- Meet the other requirements listed in the *ERFP Guidebook.*[17]

The ERFP is divided into two tiers according to technology, with Tier 1 receiving the larger proportion of funding. Tier 1 includes biomass and solar thermal facilities, and Tier 2 consists of wind facilities. Tier 3 technologies, along with one technology formerly from Tier 1 (waste tire), are no longer eligible for funding under the ERFP. Tier 3 technologies included geothermal, small hydro, digester gas, landfill gas, and municipal solid waste.

Table 6 lists the initial funding allocations by tier. Unlike the declining funding allocation for 1998 through 2001, the funding allocation for 2002 through 2006 remains constant. The reader can find the rationale for the amount of funding allocated to each tier in the Energy Commission's *Investment Plan.*

Table 6
Original Funding Allocations ($ millions) by Year

	1998	1999	2000	2001	2002	2003	2004	2005	2006	Overall
Tier 1*	$43.20	$36.45	$31.05	$24.30	$20.25	$20.25	$20.25	$20.25	$20.25	$236.25
Tier 2	$21.60	$18.90	$16.20	$13.50	$6.75	$6.75	$6.75	$6.75	$6.75	$103.95
Tier 3**	$12.15	$10.80	$8.10	$6.75	N/A	N/A	N/A	N/A	N/A	$37.80
All	**$76.95**	**$66.15**	**$55.35**	**$44.55**	**$27.00**	**$27.00**	**$27.00**	**$27.00**	**$27.00**	**$378.00**

* Waste Tire not eligible for funding from 2002 – 2006
** Tier 3 technologies are not eligible for funding from 2002 – 2006

Before it can receive funding from the ERFP, a facility must register as a renewable energy supplier and the Energy Commission must approve its eligibility. The Energy Commission requires eligible facilities to submit monthly invoices to document and receive funding for their eligible generation. Payments are calculated based on the lowest of three possible incentive rates, on a cents-per-kWh basis, as listed below:

- The difference between the target price and the market price specific to each participating facility,[18]
- A pre-determined cents per kWh cap, or
- The funds-adjusted price[19] (a modified funds available divided by generation submitted, accounting for differences in the market price among the participating facilities).

Several changes affecting the program occurred in FY 2002-2003. In February 2003, the Energy Commission adopted a new *Guidebook* outlining the directives of SB 1038. Additionally, Tier 3 facilities, representing about half of the number of eligible facilities in the initial program, are no longer eligible for funding. Tier 3 facilities include geothermal, small hydro, digester gas, landfill gas, and municipal solid waste technologies.

Another recent change in the ERFP guidelines allows facilities to be paid based on the time-of-use (TOU) energy prices rather than on a monthly average energy price. For example, a facility can receive a monthly average energy price of 5.37 cents/kWh, but during certain periods of the month (off-peak hours) can receive an energy price that is less than this amount and during other periods (on-peak hours) can receive a price higher than this amount. Using a target price of 5.37 cents/kWh, a facility that chooses TOU based payments would receive incentives for the generation during off-peak hours and no incentives for the generation during on-peak hours. Without the option of TOU based payments, the facility in the above example would receive no incentive payments.

The facilities selling to SCE that signed modified 5.37 cents/kWh contracts are paid an average of 5.37 cents/kWh monthly for all months of the year. The facilities selling to PG&E that signed modified 5.37 cents/kWh contracts are paid a monthly average of approximately 4.7 cents/kWh during summer months and 6.0 cents/kWh during winter months. The Energy

Commission decided to establish an option for TOU-based payments to achieve equity among all the participants.

The ERFP increased the target prices for 2002 to 2006 with the 2003 to 2006 target prices remaining constant. To account for inflation, the ERFP *Guidebook* allows for the adjustment to the target prices and caps. Table 7 shows target prices and caps for the ERFP to date.

Table 7 - Target Prices and Caps (cents per kWh)

		1998	1999	2000	2001	2002	2003	2004	2005	2006
Tier 1	Target Price	5.0	4.5	4.0/5.0*	5.0*	5.5	5.37	5.37	5.37	5.37
	Cap	*1.5*	*1.5*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
Tier 2	Target Price	3.5	3.5	3.5	3.5	3.8	3.8	3.8	3.8	3.8
	Cap	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
Tier 3	Target Price	3.0	3.0	3.0	3.0	N/A	N/A	N/A	N/A	N/A
	Cap	*1.0*	*1.0*	*1.0*	*1.0*	N/A	N/A	N/A	N/A	N/A

* In October 2000, the Energy Commission approved an increase in the target price for Tier 1 facilities from 4.0 to 5.0 cents per kWh starting with November 2000 generation. This change was made to ensure that biomass facilities stay on-line through at least the end of 2001 and encourage several other facilities that were off-line at the time to restart before summer 2001.

Activities and Status

As of June 30, 2003, the Energy Commission has registered 378 facilities as existing renewable suppliers; of these, 101 were re-registered and eligible for ERFP payments. Due to the elimination of Tier 3 and the signing of contracts that pay an average of 5.37 cents/kWh by a majority of the Tier 1 and Tier 2 facilities, the number of facilities currently eligible for funding is considerably less than the past FYs.

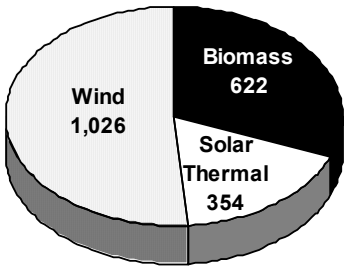
All of the currently operational Tier 1 facilities have re-registered. Only about half of the Tier 2 facilities have done so, however, because these facilities with PG&E contracts started their 5.37 cents/kWh contracts in the middle of 2001, and would not be eligible for funding because their market price is higher than the target price. These Tier 2 facilities' PG&E contracts are due to expire in 2006, at which time they are all expected to re-register with the Energy Commission.

Facilities with SCE contracts did not enter into 5.37 cents/kWh contracts until May 2003, thus qualifying for funding for January to April 2002. There are three wind facilities that are not

under 5.37 cents/kWh contracts, but the market price has not been below the 3.8 cents/kWh target price since March 2002.

The eligible ERFP facilities currently represent over 2,002 MW of capacity. Figure 2 illustrates the breakdown of all currently eligible capacity by technology.

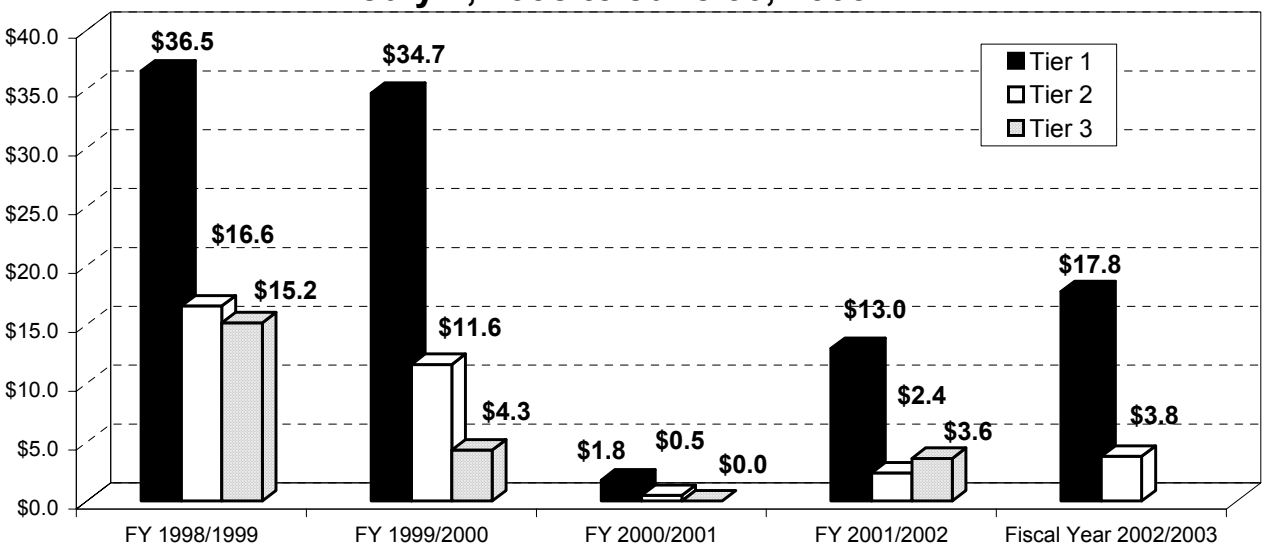
Figure 2
ERFP Capacity (MW)



The Energy Commission distributed the first payments in March 1998 and payments to eligible facilities continued through February 2002. The guidelines provided a payment schedule only through December 2001, after which time the Energy Commission suspended payments (the schedule lags behind generation and payment). The Energy Commission approved the new ERFP *Guidebook* in February 2003, and payments for 2002 generation were subsequently made in April 2003, and subsequent payments have continued on a monthly basis.

Figure 3 illustrates the breakdown of payments from Tiers 1, 2, and 3 for the last five FYs.

Figure 3
Payments from ERFP
July 1, 1998 to June 30, 2003



From the beginning of the program through June 30, 2003, the Energy Commission made payments totaling over $173.4 million from the ERFP, including approximately $21.7 million in payments during FY 2002-2003 (this total includes payments for generation from the first

half of 2002 which were not paid until April 2003). Table 8 summarizes ERFP activities for FY 2002-2003, showing the previous FY for comparison.

Table 8 - ERFP Summary
July 1, 2001 to June 30, 2003

		Fiscal Year 2001/2002	Fiscal Year 2002/2003
Tier 1	Number of Projects	43	34
	Capacity (MW)	1,130	976
	Generation (GWh)	1,729	5,057
	Payments	$12,971,516.00	$17,847,766.77
	Average Incentive Rate * (Payments/Generation)	$0.0047	$0.0035
Tier 2	Number of Projects	90	67
	Capacity (MW)	1,734	1,026
	Generation (GWh)	1,512	1,019
	Payments	$2,404,191.28	$3,822,530.44
	Average Incentive Rate (Payments/Generation)	$0.0012	$0.0038
Tier 3	Number of Projects	142	N/A
	Capacity (MW)	1,619	N/A
	Generation (GWh)	3,232	N/A
	Payments	$3,634,915.50	N/A
	Average Incentive Rate (Payments/Generation)	$0.0007	N/A
All Tiers	Number of Projects	275	101
	Capacity (MW)	4,466	2002
	Generation (GWh)	6,473	6,076
	Payments	$19,010,622.90	$21,670,297.21
	Average Incentive Rate (Payments/Generation)	$0.0018	$0.0036

The incentive rates were calculated by dividing the total payments made by the Energy Commission by the total amount of generation submitted by facilities.

Because the majority of the currently re-registered facilities have entered into 5.37 cents/kWh contracts, the Energy Commission did not make payments for every month in FY 2002-2003. As a result, the average incentive rates shown in Table 8 may be somewhat inaccurate because the generation values are lower than actual industry activity. Facilities participating in the ERFP often elect not to submit invoices when they know they will not receive payment; even so, some facilities continued to submit monthly generation through the end of FY 2002-2003.

In previous FYs, the Energy Commission approved the reallocation of up to $80 million to fund the New Renewables Program's second and third auctions, and subsequently redirected $6.2 million of these funds to the Emerging Renewables Program. An additional $3.8 million was later determined to be not needed for New Account projects, and will thus be left in the ERFP to meet its funding requirements.

The Energy Commission reallocated $15 million to the Emerging Renewables Program to satisfy the requirements of Assembly Bill 29X (AB 29X, Kehoe, Chapter 8, Statutes 2001), and in September 2003, an additional $13 million was reallocated to the Emerging Account to help meet the increased demand on funds for rebates.

From 1998 through 2000, the Energy Commission made payments totaling $633,788 to Enron Wind LLC. During the second quarter of 2003, however, the bankruptcy court approved a settlement agreement between the Energy Commission and Enron Wind LLC for repayment of this amount due to Enron's misrepresentation of the ownership status of some of its facilities. Enron Wind LLC is scheduled to repay these funds over a two-year period.

Expenditures

Payments decreased in each of the first three FYs. The drop in payments from FY 1998-1999 to FY 1999-2000 was due to a modest increase in the SRAC prices. The dramatic decrease in payments from 1999-2000 to 2000-2001 was due to a very large increase in SRAC prices during FY 2000-2001. In fact, SRAC prices were as high as 17 cents/kWh during that year. The increased payments in 2001-2002 reflected a return to historical SRAC levels.

Since the end of FY 2001-2002, SRAC prices have remained relatively low. However, most of the facilities receiving payments under SRAC have accepted amendments to their contracts so that they will receive an average of 5.37 cents/kWh for five years. No Tier 2 facilities with these contracts are eligible for ERFP funding because the contract rate exceeds their target prices. Tier 1 facilities with these contracts may or may not be eligible for funding.

Payments for FY 2002-2003 increased slightly from 2001-2002 due in part to the retroactive payments made from January through June 2002. Based on expected payments for Tier 1 and Tier 2, disbursements for the next few FYs should continue to be in the $20 to $25 million range.

The facility-specific details on payments and generation can be found in section C of the *Annual Project Activity Report to the Legislature Appendix,* on the Energy Commission's website at [www.energy.ca.gov/renewables/documents].

Chapter 4
CONSUMER EDUCATION PROGRAM

This chapter discusses the Consumer Education Program, covering the significant activities during the 12 months of FY 2002-2003. This chapter is arranged into the following sections:

- Overview
- Activities and Status
- Grant Projects
- Public Awareness Campaign
- Other Activities

Overview

Assembly Bill 1038 directed that one percent of the Renewable Resource Trust Fund be allocated to the Consumer Education Program to promote renewable energy and expand the market by increasing awareness of renewable energy and emerging renewable energy technologies. The Energy Commission implements this directive through its Renewable Energy Consumer Education Program. The goals of the program are to:

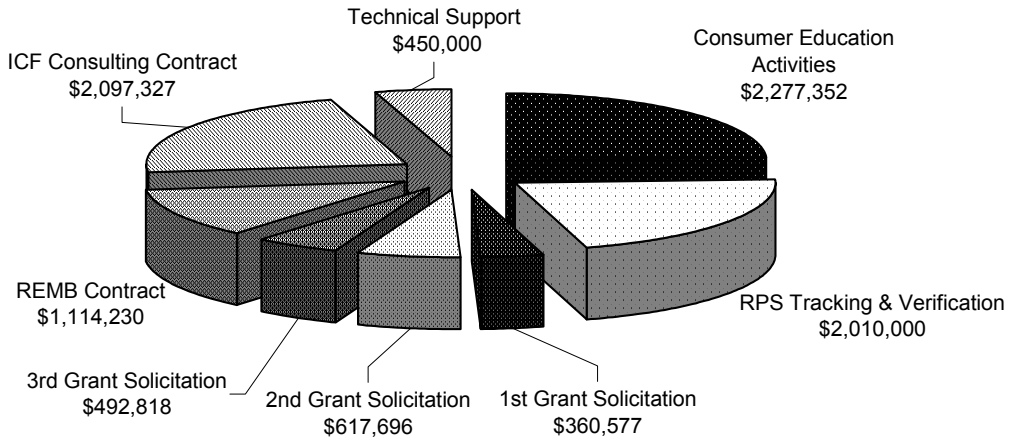
- Raise consumer awareness of renewable electricity generation and its benefits,
- Increase the purchases of small-scale emerging renewable systems installed on customer premises, and
- Leverage strategic alliances and partnerships with organizations connected to renewable energy in California.

The Energy Commission distributes Consumer Education funds through grants and contracts as outlined in its *Guidebook*. Numerous consumer education activities have been undertaken under this program to support its goals, including 20 grant projects and two contracts.

Activities and Status

During FY 2002-2003, the Consumer Education staff managed eight projects that won grant awards in response to the third grant solicitation for up to $500,000, managed five grant projects from previous solicitations representing over $600,000, and implemented the second year of a $2.1 million contract for a Renewable Energy Public Awareness Campaign. Figure 4 shows how the Consumer Education Program budget stands at the end of FY 2002-2003.

Figure 4 - Consumer Education Program Budget
June 2003



The Consumer Education activities undertaken from July 2002 through June 2003 are discussed below; full project descriptions and funding details are provided in the *Annual Project Activity Report on the Renewable Energy Program, Appendix D* on the Energy Commission's website at [www.energy.ca.gov].

Grant Projects

Since implementing the Consumer Education program, the Energy Commission has released three Program Opportunity Notices (PONs) for nearly $1.5 million in grant funding to enhance projects that advance the growth of the renewable energy market in California. In response to these solicitations, a total of 127 applications were received; funding constraints, however, permitted that only 20 projects receive grant awards.

In FY 2001-2002, the Energy Commission released a third Program Opportunity Notice for up to $500,000 in grant funding for projects to advance the growth of the renewable energy market in the state. In response, the Energy Commission received 52 applications, awarding grants to eight of the applicants in August 2002. These grant awards totaled $492,818 in funding, with grant applicants committing to nearly 100 percent in match funding and in-kind contributions.

During FY 2002-2003, the Energy Commission continued to manage the five projects resulting from the second solicitation and launched the eight projects from the third solicitation, both of which are summarized in Tables 9 and 10.

Table 9 - Summary of Grant Projects from Solicitation #2

Grant Recipient	Project Description	Funding Award	Match Fund Committed	Project Term
Scott Alan Cronk	**This Renewable House** — half-hour filmed program for TV to use a format similar to the PBS show "This Old House," Public Service Announcements, home video version for distribution through Blockbuster and Hollywood video stores free of charge, website content, and presentations.	$174,281	$437,408 (251%)	6/01 to 10/02
The Rahus Institute	**The Solar Series education and energy for schools** — energy curriculum for K-12 class level, facilitate installation of PV on schools and integrate with the curriculum, student fundraising via buy-a-watt approach to help fund the purchase of a system, resource kits such as books, CD, videos, lesson plans, lab equipment, and teacher training seminars.	$111,711	$76,642 (69%)	6/01 to 12/ 02
American Wind Energy Association	**Targeted Small Wind Turbine Marketing** — short-term direct mail marketing program and develop three case studies of successful small wind turbine installations in the areas of Sonoma, Solano, Alameda, Santa Cruz, Kern, San Bernardino, and some parts of Los Angeles (good wind resource available).	$96,205	$ 58,559 (61%)	1/02 to 11/02
Educators For The Environment	**A *Teacher's Guide* and classroom activities** — for Grades 6-12: production and dissemination, bookmarks, survey of students, families and administrators, website page highlighting the guide, flyers.	$82,076	$48,848 (60%)	8/01 to 11/03
Local Government Commission	***Stimulating the Implementation of Renewable Energy Technologies*** by California local governments — promote direct installation on local government facilities, make installation of PV easy and cost-effective, and develop expertise for purchasing, permitting, installing, and inspecting PV systems, alert to the availability and immediate cost effectiveness of PV.	$153,423	$99,283 (65%)	8/01 to 4/03
TOTAL		**$617,696**	**$720,740 (117%)**	

Table 10 - Summary of Grant Projects from Solicitation #3

Grant Recipient	Project Description	Funding Award	Match Fund Committed	Project Term
Scott Alan Cronk (1)	**Sunny & Friends** (School) — A children's educational video series for TV, the Internet and schools. The video will educate children ages 8 — 14 on renewable energy topics. It will be available in English and Spanish languages. Ten short (30 seconds to 2 minutes) educational videos will be produced and distributed.	$75,840	$88,740 (117%)	08/02 to 09/03
The Rahus Institute	**Solar Schoolhouse** (School) — Facilitate installation of PV systems at schools and provide hands-on curriculum through teacher training workshops.	$99,500	$115,000 (116%)	10/02 to 11/03
American Wind Energy Association	**Small Wind Turbine County Siting Outreach** (Public Entity) — Develop and distribute a small wind siting handbook that focuses on educating county officials, staff and consumers about identifying appropriate locations for small wind turbines and addressing permitting and zoning issues to help overcome siting barriers.	$49,696	$17,782 (36%)	10/02 to 9/03
Energy Solutions	**RENew Construction** (New Construction) — Provide generic and customized information about renewable electricity options to developers, architects and engineers in the project planning or design stage. Develop a "Renewable Energy New Construction Tool Kit", two case studies, provide technical assistance to design projects, brochure and outreach campaign aimed at Green Building design professionals.	$100,000	$126,991 (127%)	10/02 to 1/04
Real Goods Solar Living Institute	**Solar Living Institute Installer Training Program** (New Construction) — Educate electricians in solar installations focusing on contractors targeting those involved with affordable housing agencies and organizations and the development of low-income housing. Hold classes all over California.	85,167	$57,775 (68%)	9/02 to 08/03
Twin Pines Cooperative Foundation	**Reducing Energy Costs Roof By Roof: PV for the Non-profit and Cooperative**	$14,803	$8,010 (54%)	11/02 to 10/03

Grant Recipient	Project Description	Funding Award	Match Fund Committed	Project Term
	Affordable Housing Industry (Events) — Produce a workshop and solar tours for non-profit housing industry professionals. Develop a booklet that will provide the attendees information on how to successfully include renewable technology in their development and redevelopment projects.			
Global Possibilities	**Solar Home Tour 2002** (Event) — Host the Solar Home Tour in Los Angeles area. Attendees include consumers, architects, designers, environmental organizations, builders, contractors and developers.	$14,802	$14,350 (97%)	09/02 to 12/03
Scott Alan Cronk (2)	**CalEnergy.org** (Advertising) — Enhancement of the established internet website. Develop new information and related tools. Modify Contractor database, enhance photo gallery, and improve navigation and graphics. The website will be advertised through Internet, television (FOX40) and media/public relations.	$53,010	$57,040 (108%)	08/02 to 08/03
TOTAL		**$492,818**	**$485,688 (99%)**	

These grant project activities include the following activities:

- Outreach and technical assistance targeted to local governments,
- Educational curricula for schools,
- Media outreach and articles,
- A targeted marketing campaign for small wind systems,
- *This Renewable House*, a 30-minute video,
- Website development and support,
- Public service announcements (PSAs),
- Solar training classes for electricians and solar installers,
- Small Wind Turbine County Siting Guide,
- Buying guide for consumers interested in small wind energy systems,
- Workshop and solar tours for non-profit and affordable housing industry professionals,
- Sponsor Solar Home Tours, and
- Solar photovoltaic technical assistance for developers, architects and engineers in new construction applications.

Figures 5 and 6 show how the grant funds for these 13 projects were distributed among project categories.

Figure 5 - Grant Funding by Type For Solicitation #2 ($617,696)

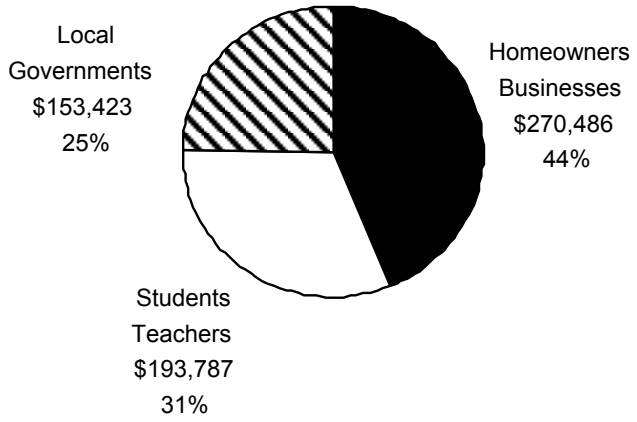
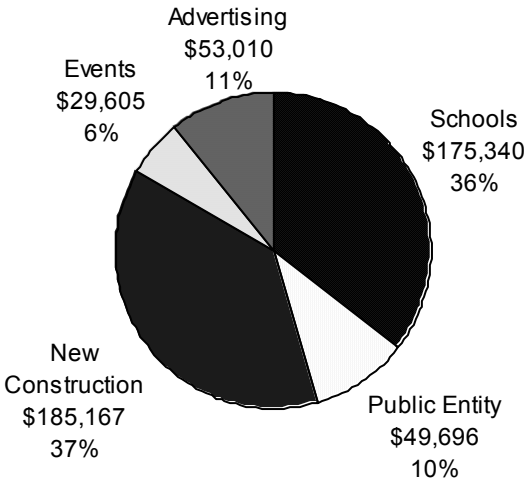


Figure 6 - Grant Funding by Type For Solicitation #3 ($492,818)



Public Awareness Campaign

In 2001, the Energy Commission awarded a $2.1 million contract to ICF Consulting to create and implement a public awareness campaign about renewable energy. During FY 2002-2003, payments to ICF Consulting totaled over $727,000.

Beginning in late 2001, the ICF Consulting team collected information on the level of public awareness and prevailing attitudes on renewables through an in-depth telephone survey and focus groups conducted over four metro areas: Los Angeles, Fresno, San Diego, and San Jose. Based on the results of these efforts, the ICF team developed strategies by defining clear messaging tactics and identifying effective outreach methods. Using a multi-prong marketing plan, the ICF staff sought to achieve the objectives of the Consumer Education Program. The objectives of the campaign are to:

- Understand consumer attitudes, perceptions, knowledge and level of awareness concerning renewable energy.
- Raise consumer awareness of renewable energy.
- Increase consumer knowledge about the benefits and mechanics of purchasing renewable energy technologies.
- Increase renewable energy technology purchases.
- Coordinate resources and opportunities available through partnerships with organizations connected to renewable energy in California.

CAMPAIGN DEVELOPMENT AND IMPLEMENTATION

To implement the campaign, the ICF team developed several concepts and utilized a variety of methods best suited to these objectives. During FY 2001-2002, the ICF Consulting team developed a new graphic look for the Renewable Energy Program, which was incorporated into outreach materials. These materials display the new campaign slogan, "*Harness the Power All Around Us*" and feature icons to represent solar, wind, fuel cells (using renewable fuel), geothermal, biomass, and hydro resources, which are illustrated with the slogan in Figure 7.

Figure 7 – Campaign Brand

These icons and slogan brand the Renewable Energy Program with a recognizable "look" and appeal that connects the brand with the objectives of the Consumer Education Program. Branding not only gives continuity to campaign materials, it creates an identity that can be used far beyond this campaign to provide consumers with a familiar message and heightens consumer confidence.

During FY 2002-2003, the ICF team continued to distribute campaign materials though media kits, special events and direct requests from the Renewable Energy Alliance hotline operated

by the ICF staff. The ICF team developed new promotional collateral – lenticular magnets and pens made of recycled materials displaying the Renewable Energy Program contact information – to distribute to consumers who visit the program's exhibits or meet with campaign staff members. These "giveaways" are virtual brochures that owners can use and/or display and their homes and businesses as visible reminders of how to contact the Renewable Energy Program for more information.

The Renewable Energy Alliance (REAlliance) – an organization designed to bring together businesses with an interest in renewable energy – was formed last FY to share educational resources on renewable technologies. This partnership-building effort maximized the ICF team's outreach efforts and will provide an ongoing communication between the Energy Commission and REAlliance members in the future.

The ICF staff coordinated event and media outreach activities to work in tandem to reach the intended target audiences and ultimately influence their decisions to adopt renewable energy. During FY 2002-2003, the team raised the profile of renewable energy statewide by exhibiting at shows totaling more than 34,000 attendees.

Media venues such as local newspapers and consumer talk radio programs expanded the target audience base well beyond the residential consumer. Campaign materials with the new "look and feel" that the ICF team created during the previous FY were used in media kits and disseminated at consumer events.

Toward the end of FY 2002-2003, the Energy Commission directed the ICF team to cease proactive media outreach activities, but to continue responding to inquiries, facilitating interviews upon request, and providing information to media as needed.

MEDIA OUTREACH

Based on the research conducted during 2001, ICF Consulting combined consumer need for renewables information (while realizing budgetary limitations) with an effective method of communication: optimizing unpaid media opportunities ("free publicity"). In addition to responding to media inquiries, the ICF team determined that careful localized placement of campaign information was the core to educating consumers about renewable energy concepts and the Renewable Energy Program on a broader scale statewide. The ICF team concluded that the most effective media outreach was television and radio interviews, magazine and newspaper articles, online stories and public service advertising.

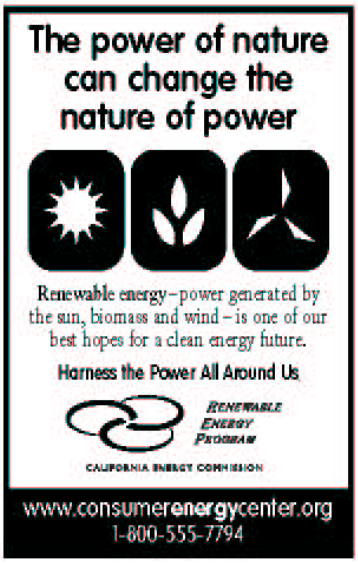
The ICF group networked with broadcast and print and online media to generate interviews and stories about consumer renewable energy usage as well as directing consumers to renewable energy resource information. Over 300 bylined articles, radio interviews, and public service announcements (PSAs) were the mainstay of this targeted outreach which the ICF staff used to promote the Renewable Energy Program. These campaign implementation activities are discussed below.

Newspaper and Magazine Outreach

During FY 2002-2003, the ICF staff created and launched a PSA campaign to nearly 500 newspapers, magazines, and trade publications, and about 200 radio stations, throughout California. Figure 8 displays an example of several PSA ads that were developed for this campaign.

Print articles appeared online and in trade well as general public print publications such as the following:

Figure 8
Sample PSA Ad



- *Victorville Daily Press-Real Estate Section* newspaper
- San Francisco area's *Marina Times* (within a 5 part series) newspaper
- *California Real Estate Journal*
- *Home Energy*
- *Business Facilities Magazine* (featured cover story)
- *Solar Today* magazine
- *Solutions* newsletter
- *San Diego Union Tribune*
- *Desert Dispatch*
- *North County Times.*

These articles also were also placed in online publications and websites*: Realty Times*-www.realtytimes.com *(*an online renewable energy publication), www.energypulse.net, and www.solaraccess.com. Other print placements included calendar listings in support of the Solar Home Tours and the Solar Living Center Solar Training Classes in Southern and Northern California.

Radio Outreach

The campaign included 20 broadcast radio spots on EarthNews Radio, running on seven radio stations throughout the San Francisco and Los Angeles regions. These eight 90-second radio spots featured interviews with renewable energy experts focusing on the benefits of using renewable energy in the business and residential markets. A second radio campaign included four 90-second radio spots featuring green building design, energy efficiency, and renewable energy systems in the design phase. These spots, featuring architect Warren Wagner, owner of W3 Architects in California, were web-cast globally on Environmental News Network (www.enn.com) and posted on various websites. Other media outreach included broadcast interviews with key Energy Commission spokespeople, homeowner-users of renewable energy technologies, and other expert spokespeople promoting renewable energy, such as Casey Coates Danson, president of Global Possibilities, and Les Nelson, president of California Solar Energy Industries Association.

EVENTS

To complement the media outreach, the ICF team participated in carefully chosen renewable energy events as another tactic to heighten consumer awareness in a variety of audiences about renewable energy. Using the opportunity to reach homeowners who were ready to purchase a renewable energy system, a booth staffed by the ICF and Energy Commission staff disseminated renewable energy fact sheets, the newly developed Emerging Renewables brochure, and flyers about the solar tax credit and the Energy Commission's Solar Schools Program. Several campaign materials were developed to capitalize on "Energy Awareness Month," an annual October event. To capture consumer interest, a "10 Tips" fact sheet on installing solar was distributed to media together with community calendar listings for the Solar Home Tours scheduled in Southern and Northern California.

Exhibiting at building industry trade shows targeted contractors, architects, and designers, and the general public (many of whom do their own home upgrades). To reach these commercial consumers and key building industry groups, the ICF and Energy Commission staff participated in the following events in San Francisco and Long Beach during FY 2002-2003:

- Building Industry Show
- Green Materials Showcase
- Pacific Coast Builders' Conference (PCBC)
- Buildex

Events targeted to consumers also played a large role in the campaign. During FY 2002-2003, the Energy Commission and the ICF staff presented the Renewable Energy Program's booths at the following events in Long Beach, Pomona, and Hopland:

- Home and Garden Show in Long Beach
- SoCal Renewable Energy Expo
- SolFest

More than 450 lead cards were collected that captured contact information for Californians requesting additional information on renewable energy, to which the Energy Commission staff responded by mailing detailed information or personally calling consumers.

PARTNERSHIPS

Leveraging partnerships is one of the key elements developed by ICF to bridge between the end of the contract and the Energy Commission's efforts.

During the previous fiscal year, the ICF team created the REAlliance, a voluntary partnership program designed to facilitate the sharing of resources among the Energy Commission and alliance members in promoting better understanding and awareness of renewable energy. A resource kit was developed for alliance members that includes copies of all Energy Commission fact sheets and ordering information, public service advertisements, web

banners, a ready-to-use press release, case studies, a list of renewable energy organizations, contacts and events, and copies of videos. Alliance members can update their binders as new and updated information becomes available. The ICF team developed and submitted new case studies highlighting residential and commercial renewable energy technology installations including Fetzer Winery in Hopland. REAlliance members receive regular E-newsletters announcing Renewable Energy Program updates, information on workshops, training classes and events, and highlighting renewable energy in the news.

Beginning in March 2002, the ICF team began recruited REAlliance members, seeing a surge in membership following presentations highlighting the Alliance at Solar Forums conducted in Los Angeles, San Diego, and Sacramento.

In September 2002, the REAlliance membership stood at more than 40 organizations, and by June 2003, the membership had grown to 162 members and 154 member organizations. As the ICF contract term comes to a close during the next FY, the REAlliance activities will be transitioned to the Energy Commission staff.

During the previous FY, the Energy Commission and ICF Consulting staff worked with representatives of the Hearst Castle® Visitor Center to develop a showcase project highlighting energy efficiency and renewable energy technologies. In July 2002, the ICF team initiated research into the so-called "edu-trainment" portion of the project. In early 2003 the ICF staff met with potential project sponsors and provided a package of grant opportunities to Visitor Center staff to oversee the grant writing process and to help match grants with various project elements. A luncheon was planned for potential donors in June 2003 at the Hearst Castle® Visitor Center.

Other Activities

During FY 2002-2003, the Consumer Education Program became a member of the California Solar Center (CSC) for $2,500 for one year. Existing only as an Internet resource, the CSC promotes the use of renewable energy through education, research, and program and policy development, and provides information on solar energy activities specific to California. In addition to extending the Commission's renewable energy consumer education activities, the Energy Commission gains the following benefits from its CSC membership:

- A dedicated web page as a venue for promoting renewable energy and highlighting the Renewable Energy Program

- The opportunity to position itself as a supporter and host of a statewide venue for policy and program discussions;

- The benefit of advertising its many solar energy projects;

- A link-through to the Emerging Renewables rebate program.

The Energy Commission's website contains all fact sheets, consumer guides, and Consumer Education marketing materials, including many that grant recipients have developed, which can be found at [www.energy.ca.gov/renewables/marketing/index.html] or by calling the Energy Call Center at (800) 555-7794. For detailed information about the grant projects and public awareness campaign activities from July 2002 through June 2003, please see Appendix D in the Energy Commission's *Annual Project Activity Report on the Renewa*ble *Energy Program Appendix.*

Chapter 5
CUSTOMER CREDIT PROGRAM

This chapter discusses the Customer Credit Program, covering the significant activities during FY 2002-2003. This chapter is arranged into the following sections:

- Overview
- Activities and Status
- Change in the Number of Products and Providers
- Expenditures

Overview

The Customer Credit Program was intended to foster market demand for renewable electricity by offering financial incentives to renewable energy providers. By passing the customer credit along to their customers, eligible renewable providers can compete with conventional electricity providers.

The customer credit is essentially a rate discount in cents/kWh for eligible renewable electricity purchases. The Energy Commission distributes these funds to providers who deliver eligible energy to qualifying customers. The only eligible customers are those who participate in the direct access market and purchase energy from a registered renewable provider, instead of their default utility distribution company. In September 2001, the CPUC suspended consumers' ability to purchase renewable energy through direct access contracts. Consequently, only those providers still serving previous direct access customers are receiving customer credits.

To become eligible for the customer credit, electric service providers registered themselves and their eligible products with the Energy Commission. A renewable energy product is typically a mix of renewable energy; for example, a product may be 50 percent renewable and 50 percent "California mix."[20] Only in-state renewable generation is eligible for the customer credit[21]. Wholesalers or power pools may also register with the Energy Commission to become registered renewable wholesalers, although they are not eligible for funding.[22]

The Energy Commission makes monthly payments to registered renewable providers based on data submitted in their Monthly Performance Reports (MPRs). The MPR includes data on the generation source of energy offered by providers and on sales to customers.

Activities and Status

Since the Customer Credit Program is closely tied to industry developments, it was affected by California's electricity crisis beginning in late 2000. In light of these developments and with the passage of SB 1038, the Legislature required the Energy Commission to evaluate the Customer Credit Program and make recommendations regarding whether it should be continued. In particular, the Energy Commission was asked to evaluate three specific areas: whether the program could serve its objective in its current form, whether it would better serve its purpose with adjustments, or whether it should be discontinued and the funds used for other purposes.

In developing its options and recommendations, the Energy Commission considered a number of issues, such as whether the Customer Credit Program would continue to stimulate the market for renewable energy products, contribute significantly to a self-sufficient market, or contribute to a future renewables market. The Energy Commission also took into account the considerable complexity and uncertainty surrounding future regulatory decisions, such as those concerning California's newly enacted Renewables Portfolio Standard.

On April 1, 2003, the Energy Commission adopted the *Customer Credit Renewable Resources Account: Report to the Governor and the Legislature (Customer Credit Report)*[23] and recommended the following:

1. Given the present uncertainties, complexity of issues, and timing of the Renewables Portfolio Standard implementation, discontinue the Customer Credit Program, and re-allocate annual funding as shown in Table 11.

Table 11 - Fund Reallocations from Customer Credit Program

Receiving Program	$ Millions/Year	% of Total Customer Credit Funds
Emerging Renewables Program	$6.075	45
New Renewables Program	$6.075	45
Consumer Education Program	$1.350	10
TOTAL	**$13.500**	**100%**

2. Approve retroactive payments to eligible customers for the period January 1, 2002, through April 1, 2003, at the incentive rate of 1 cent per kWh. These payments should be made from unused Renewable Energy Program funds, as authorized under SB 90.

3. Set aside funds within the Consumer Education Program to support and accelerate the scoping, design, and development efforts for the required Renewables Portfolio Standard generation tracking, verification, and accounting system. These efforts are to be consistent with SB 1078 and Renewable Energy Program requirements.

In May 2003, the Energy Commission adopted the seventh edition of the *Guidebook for the Renewable Energy Program, Volume 4 – Customer Credit Subaccount,*[24] which authorized the Energy Commission to proceed with the recommendations in the *Customer Credit Report*. As outlined in the *Guidebook*, providers were given until July 10, 2003 to submit all Monthly Performance Reports and Monthly Performance Report Amendments for the January 1, 2002 through April 1, 2003 period to be eligible for retroactive payments. Because these items were not submitted until after the end of FY 2002-2003, this report does not include data on the number of customers, generation purchased, or customer credits paid in FY 2002-2003. The Energy Commission will report on this data in the next report.

Change in the Number of Products and Providers

One indicator of market activity for the Customer Credit Program has been the number of registered providers. However, because providers can maintain registration status without actually serving customers, it is more instructive to study the registered providers who are actively serving their customers.

By April 2003, when the Customer Credit Program was discontinued, most providers had returned a large portion of their customer base and energy load to the default utility. As shown in Table 12, there were five active providers during FY 2002-2003.

Table 12
Registered and Active Renewable Providers and Products

Customer Credit Activity	July 2001-June 2002	July 2002-June 2003
Number of providers registered and active in the market	6	5
Number of providers that exited the market	1	0
Number of products that exited the market	1	0
Total providers registered at the end of the fiscal year and actively serving customers	**5**	**5**

The number of products registered with the Energy Commission, which registered providers actively marketed, remains at 19. Table 13 shows a breakdown of the percentage of these electricity products that is renewable. As illustrated, the majority of products offered in the Customer Credit Program are 100 percent renewable.

Table 13
Available Products and their Renewable Proportion

Percentage Renewable	<50%	50%	100%
July 2001-June 2002	3	3	13
July 2002-June 2003	3	3	13

Expenditures

Registered renewable providers submit monthly data to the Energy Commission on eligible generation and sales to customers, which are used to calculate payments from the Customer Credit Program. An important factor in the payment calculations is the cents per kWh credit level.

At the start of the program, the Energy Commission set the credit level at the maximum amount of 1.5 cents per kWh to encourage market development. Market growth led the Energy Commission to reduce the credit level over the duration of the program as a way to extend the funding availability for customer credits. Since December 2000, the credit level has remained constant at 1 cent/kWh.

As shown in Table 14, customer credit funds remain at $6.74 million, the same level as at the end of the previous FY. Because a finite amount of funds remains for Customer Credit payments, the Energy Commission postponed payments until each provider submitted an independent audit of its Annual Report. Because the MPRs and Amendments were not submitted until after FY 2003, no payments were made in FY 2002-2003. According to the Customer Credit guidelines, if available funds become depleted, they will be distributed in a proportional manner based on the last MPR submissions.

Table 14
Financial Summary by Fiscal Year

	Payments (Millions $)	Funds Remaining (Millions $)*
July 2001 - June 2002	$4.77	$6.74
July 2002 - June 2003	$0.0	$6.74

*In September 2001, $10 million was reallocated from the Customer Credit Program to the Emerging Renewables Program.

Chapter 6
EMERGING RENEWABLES PROGRAM

This chapter discusses the Emerging Renewables Program, covering the significant activities during FY 2002-2003. The chapter is arranged into the following sections:

- Overview
- Activities and Status
- Projects in IOU Service Areas
- Projects in Publicly-Owned Electric Utility Service Areas (POEU)
- Technical Support

Overview

The Emerging Renewables Program (formerly called the Emerging Renewables Buydown Account) provides funding, in the form of rebates, to buyers, sellers, lessors, or lessees of eligible electricity generating systems powered by emerging renewable energy resources. Technologies eligible to participate in the program are wind systems, photovoltaic (PV) systems, solar thermal electric systems, and fuel cell systems using renewable fuels.

Rebates are intended to reduce the net cost of generating equipment using emerging renewable technologies to spur extensive sales of such systems. Increased sales are expected to encourage system manufacturers, sellers, and installers to expand their operations and ultimately reduce their costs to consumers.

The program also encourages the siting of small, reliable distributed generating systems throughout California in locations where the electricity is both needed and consumed. To be eligible, systems must be located on the premises of customers of California's three large IOUs. For the first half of FY 2002-2003, funds were also available to customers in POEU service areas. All systems must be sized so that the electricity they produce offsets part or all of the customer’s electrical needs.

Currently, rebates are only available for generating systems less than 30 kilowatts in size. While larger systems may become eligible for rebates at some future date, the Energy Commission has not yet determined the design of that option. The types of applications where less than 30 kilowatts of generation is installed include residential, small commercial and agricultural customers.

The Emerging Renewables Program requirements were developed to encourage the use of quality equipment and to attract applicants who are serious about purchasing and installing a renewable energy system. Applicants seeking funding submit a rebate reservation request to the Energy Commission that describes the system they are purchasing. The system's major

components must be on the Energy Commission's list of certified equipment, and the application must include a utility bill and equipment purchase and installation agreements. Once the Energy Commission approves a reservation, an applicant installing less than a 30 kilowatt system have up to nine months to complete the installation. A group of reservations at one location, such as multiple homes in a new residential development, which total 30 kilowatts or more in aggregate capacity, receive an 18-month reservation.

The Energy Commission does not release rebate funding until the applicant provides adequate evidence that the system was purchased and installed, indicates compliance with the local building department requirements and connection to the utility grid, and shows evidence of a five-year system warranty.

For additional details about eligibility, refer to the *Emerging Renewables Program Guidebook.*[25]

Activities and Status

Beginning in the fall of 2000, California's energy crisis sparked a dramatic increase in consumers' interest in their electricity generation options, with a commensurate rise in program activity during FY 2001-2002. In FY 2002-2003, consumer activity increased, even though the Energy Commission made significant changes to the program and lowered the rebate during that time. Several pieces of legislation were enacted in the past few years in response to the challenges of the energy crisis, particularly to assist in meeting summer peak load demand. Key legislation is discussed below.

In April 2001, Assembly Bill 29X[26] (AB29X, Kehoe, Chapter 8, Statutes 2001) established a number of significant energy incentives affecting the Emerging Renewables Program, including the following:

- Adding $22 million to the Emerging Renewables Program for small systems,
- Providing $8 million in rebates for municipal utility customers installing small PV systems,
- Giving the Energy Commission authority to increase the rebate levels, and
- Expanding net metering provisions for systems up to one MW.

The original program structure included declining rebate levels, from $3 to $1 per watt, which were designed to encourage a decrease in system costs over time. In May 2001, per the directive of AB 29X, the rebate level was increased to the lesser of $4.50 per watt or 50 percent of the installed system cost. Set in the midst of the electricity crisis, this rebate increase was an additional incentive for California's residents and business owners to explore PV and small wind systems to secure a reliable and cost-predictable energy source.

Senate Bill 90 specified that the Energy Commission transfer three percent of the funds not used in other Renewable Resource Trust Fund programs ($16.2 million) to the Emerging Renewables Program; the transfer occured in September 2001.

Since that time, consistently strong demand for rebate dollars depleted available funds (except for those designated for use in POEU service areas), and in September 2002, the Energy Commission again augmented the Emerging Renewables Program with $13 million from the Existing Renewable Facilities Program. Because the state's overall budget deficit was continuing to grow, however, Senate Bill 19X directed the Energy Commission to transfer the unused POEU funds, totaling about $6.3 million, to the General Fund. In October 2002, the Energy Commission stopped accepting rebate reservations, as funds were expected to be depleted for small-system projects in IOU service areas.

The passage of SB 1038 in September 2002 authorized an additional $118 million in funding for the Emerging Renewables Program. Although intended to fund the program through 2006, $23 million was already encumbered by the end of FY 2002-2003. A total of $225[27] million in funding has been assigned to the Emerging Renewables Program from 1998 through 2006.

Assembly Bill 58 (AB 58, Keeley, Chapter 836, Statutes of 2002) authorized the Energy Commission to establish rebates of up to 75 percent of total installed costs for eligible systems installed on affordable housing projects.

In February 2003, the Energy Commission adopted a new *Guidebook* authorizing the disbursement of funds collected under SB 1038, and which detailed significant program changes, including the following:

- Reduced rebate structure and funding level;
- Special funding for systems installed on affordable housing; and
- Requirement for system performance meters as part of the system.

From July 2002 through June 2003, the Emerging Renewables Program received over 6,500 applications requesting rebate reservations. During the last four months of this reporting period, the Energy Commission received an average of over 1,100 applications per month, nearly a four-fold increase over an average of 290 per month for the last four months of FY 2001-2002. This is partially because of built-up demand occurring during the November 2002 through February 2003 timeframe, when the Energy Commission could not accept new applications because of depleted rebate funds. Furthermore, during June 2003, applicants who were motivated to maximize their rebate before it dropped five percent in July, quickly submitted applications just prior to that deadline.

The next two sections describe project activities and payments in the IOU and POEU service areas, followed by a discussion of activities conducted with the assistance of technical support expertise.

Projects in Investor-Owned Utility Service Areas
(SB 90 and SB 1038 Funding)

During FY 2002-2003, the Energy Commission paid about $ 41.4 million to rebate applicants for over 2,300 completed projects located in IOU service areas. These projects represent nearly 10,000 kW of capacity from PV and wind systems.

During this reporting period, the Energy Commission approved 2,018 reservations for projects in IOU service areas that are in various stages of development. As of June 20, 2003, approximately $36.2 million remained encumbered for these pending projects, representing 9,135 kW of capacity. Table 15 provides the status of the Emerging Renewables Program rebate reservations and payments in IOU service areas for FY 2002-2003, with FY 2001-2002 shown for comparison. At the end of FY 2002-2003 money remained encumbered for about 450 more systems than at the end of FY 2001-2002. This reflects the continued strong participation in the program even though reservation funds were not available for four months of that time period (November 2002 through February 2003), caused by the delay between initial program funds being exhausted and authority for the Energy Commission to distribute new funds under SB 1038.

Table 15 - Rebate Reservation and Payment Activity (IOU Service Areas)

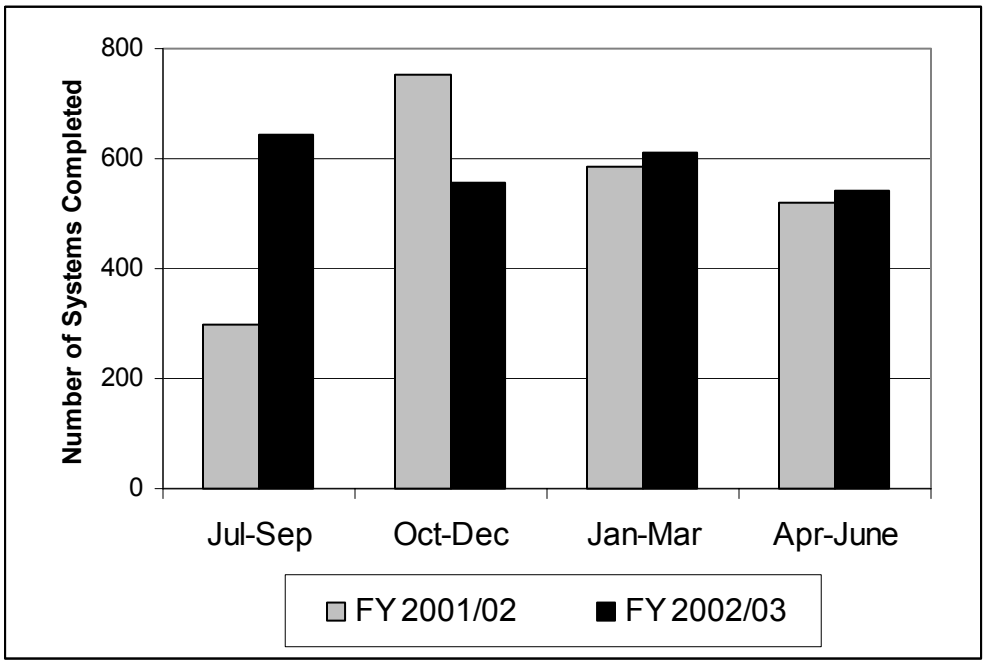
	7/1/01 to 6/30/02	7/1/02 to 6/30/03
Systems Completed during FY		
Number of Systems	2,160	2,356
Total Capacity (kW)	7,213	9,768
Funds Paid*	**$30,373,788**	**$41,371,687**
Funds Remaining Encumbered at end of FY		
Number of Systems	1,567	2,018
Total Capacity (kW)	8,522	9,135
Estimated Funds Encumbered	**$35,337,681**	**$36,148,136**
Total Encumbered and Paid at end of FY		
Number of Systems	3,727	4,374
Total Capacity (kW)	15,735	18,903
Total Funds Encumbered and Paid	**$65,711,469**	**$77,519,823**

*The actual funds paid during FY 2001-2002 were $32.8 million, and actual funds paid during FY 2002-2003 were $40.1 million ($0.9 million of which was paid to POEUs. Differences between actual funds paid and the amounts shown in this table reflect the lag time between date of data entry and date of disbursement. Data for the 7/1/01 to 6/30/02 column are from the *Annual Project Activity Report to the Legislature* for FY 2001-2002. [28]

Although projects awarded rebate funding have nine or 18 months to claim payment, depending on the size of the project, many projects are completed much sooner. During

FY 2002-2003, the number of rebates paid per quarter for systems in IOU service areas averaged 589; the actual number of rebates paid per quarter is illustrated in Figure 9. Almost three hundred more projects were completed in FY 2002-2003 than in the previous FY.

Figure 9
Quarterly Number of Systems Completed (IOU Service Areas)
July 1, 2002 – June 30, 2003 Compared to FY 2001-2002



Projects in Publicly-Owned Electric Utility Service Areas (AB 29X Funding)

In December 2001, the Energy Commission adopted guidelines to administer the $8 million in rebate funds provided by AB 29X for grid-connected small PV systems (10 kW and smaller) located in local publicly owned electric utility service areas. During the 2002-2003 fiscal year, the Energy Commission paid about $981,100 to 108 applicants for completed projects participating in these service areas, representing 291 kW of capacity from PV systems.

In December 2002, the Energy Commission stopped accepting applications in publicly owned electric utility service areas. Encumbered funds continue to be paid as claims for payment are received. As of June 30, 2003, about $475,400 remained encumbered for 25 projects with a total of 107 kW of capacity in various stages of development in publicly owned electric utility service areas.

For an itemized list of project descriptions in all service territories, amount of funding reserved and paid, and energy capacity of all projects awarded rebates during FY 2002-2003,

refer to the *Annual Project Activity Report on the Renewable Energy Program, Appendix F* on the Energy Commission's website at [www.energy.ca.gov/renewables/documents].

Technical Support

The Energy Commission staff works closely with technical support contractors and their subcontractors to help identify market conditions and barriers to increasing customer purchases of emerging renewable systems. This work has yielded several projects to help consumers make informed purchase decisions and ensure optimal performance from their electric generating systems.

The Cleanpower Estimator™ is an interactive web-based tool that allows consumers to estimate, among other things, how a PV or small wind system could affect their electricity costs. The estimator, licensed from Cleanpower Research for the last two years, is useful to both residential and non-residential customers; it can be found on the Energy Commission's website at [www.consumerenergycenter.org/renewable]. Cleanpower Research continues to update the estimator as rebate levels and program requirements change. In February 2002, the Energy Commission extended the license for the Cleanpower Estimator™ to 2004.

Senate Bill 1038 requires the Energy Commission to "spot check" a sample of the systems installed using program funding to determine if the systems comply with program requirements. This audit work is to verify that systems were properly installed and still functioning. The Renewable Energy Program's technical support contractor, KEMA-Xenergy, is scheduled to begin the field verification work in the second quarter of FY 2003-2004. Audits from prior years bring the total number of systems currently verified to 132. Earlier verification reports submitted to the Energy Commission through the previous technical support contractor found no cases of significant noncompliance, but six projects were found to have substituted among eligible components and made minor variations in system sizes.

In FY 2002-2003, the Energy Commission relied upon KEMA-Xenergy to assist program staff in improving service to those participating in the program. The KEMA-Xenergy team reviews new equipment models to facilitate continuous updates to the lists of eligible equipment the Energy Commission posts on its website. Furthermore, work began this FY on developing an on-line reservation form and a method for sellers or purchasers to check on the status of their submittals electronically.

Endnotes

[1] California Energy Commission Publication Number P500-97-002, March 1997.
[2] California Energy Commission Publication Number P500-00-022, June 2001.
[3] This total does not include $226,000 collected from Bear Valley Electric Company ratepayers nor $14,403 in voluntary contributions to the Renewable Resource Trust Fund.
[4] Reserved funds are committed but not yet formally assigned to specific projects.
[5] Public Utilities Code §383.5, subdivision (g) authorizes reallocation of funds among accounts. In some cases, the actual amount of funds reallocated will depend upon project needs and status. For example, the Energy Commission has decided to reallocate up to $80 million of unused funds from the Existing Account to the New Account for purposes of funding additional auctions. The results of the auctions and the availability of funds awarded in previous auctions will determine the amount of funds actually reallocated.
[6] Energy Commission Publication number 500-03-103A.
[7] Available online at: [www.energy.ca.gov/2003_energy_action_plan/2003-05-08_action_plan.pdf].
[8] Collaboration is specifically called for in the RPS legislation with the following language: 399.11 (a) "It is the intent of the Legislature that the California Public Utilities Commission and the State Energy Resources Conservation and Development Commission implement the California Renewables Portfolio Standard Program described in this article"; 399.11(d) the RPS Program "'is intended to complement the Renewable Energy Program administered by the State Energy Conservation and Development Commission"; 399.13(b) "The commission shall collect data from electrical corporations and remit the data to the Energy Commission within 90 days of the request"; and 399.15(e) "The commission shall consult with the Energy Commission in calculating market prices under subdivision (c) and establishing other renewables portfolio standard policies."
[9] CPUC proceeding titled, "Order Instituting Rulemaking to Establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development" (R01-10-24).
[10] Energy Commission publication number 500-03-023F, June 2003.
[11] Solar thermal in this section refers to concentrating solar power electric generation, not solar hot water heating.
[12] Energy Commission publication number 500-03-049D, June 2003.
[13] Energy Commission publication number 500-03-049F, October 2003.
[14] California Public Utilities Commission, June 19, 2003, Decision 03-06-071, Order Initiating Implementation of the Senate Bill 1078 Renewable Portfolio Standard Program.
[15] California Energy Commission Publication number P500-01-014V2A, Fifth Edition, August 2002.
[16] California Energy Commission Publication number P500-03-004F, February 2003.
[17] Energy Commission publication number P500-03-002F, February 2003.
[18] The value of the market price used in calculating the payment can be the weighted seasonal average short-run avoided energy cost (SRAC) specific to each of the three major IOUs

(PG&E, SCE, and SDG&E) or other price used in determining the energy payments to each facility. Thus, the market price can be different for each facility.

[19] This incentive rate is calculated by taking the funds available divided by generation submitted, then modifying that value to account for differences in the SRAC price between PG&E, SCE, and SDG&E.

[20] "California Mix" refers to net system power. Retail providers may identify a resource mix for their product that is identical to or different from the California Mix.

[21] On December 20, 2000, the Energy Commission allowed for the wholesale trading of renewable attributes to qualify for the customer credit, assuming that a matching amount of commodity energy is sold under a direct access contract and that all other program requirements are met.

[22] A wholesaler buys electricity and sells it to providers or acts as a broker in negotiating power sales to providers.

[23] Energy Commission publication number 500-03-008F, April 2003.

[24] Energy Commission publication number P500-03-047V4, May 2003.

[25] California Energy Commission Publication Number P500-03-001F, February 2003.

[26] Assembly Bill 29X directed that $15 million from the General Fund be placed in the Emerging Account, and that $15 million be re-directed from another Renewable Resource Trust Fund Account (the Energy Commission determined that the latter would be re-directed from the Existing Account). Of this $30 million, AB 29X required that $8 million be allocated to customers of POEUs.

[27] This figure does not include $30 million reallocated from the Customer Credit Program; the Energy Commission has not yet determined how those funds would be allocated among categories in the Emerging Renewables Program.

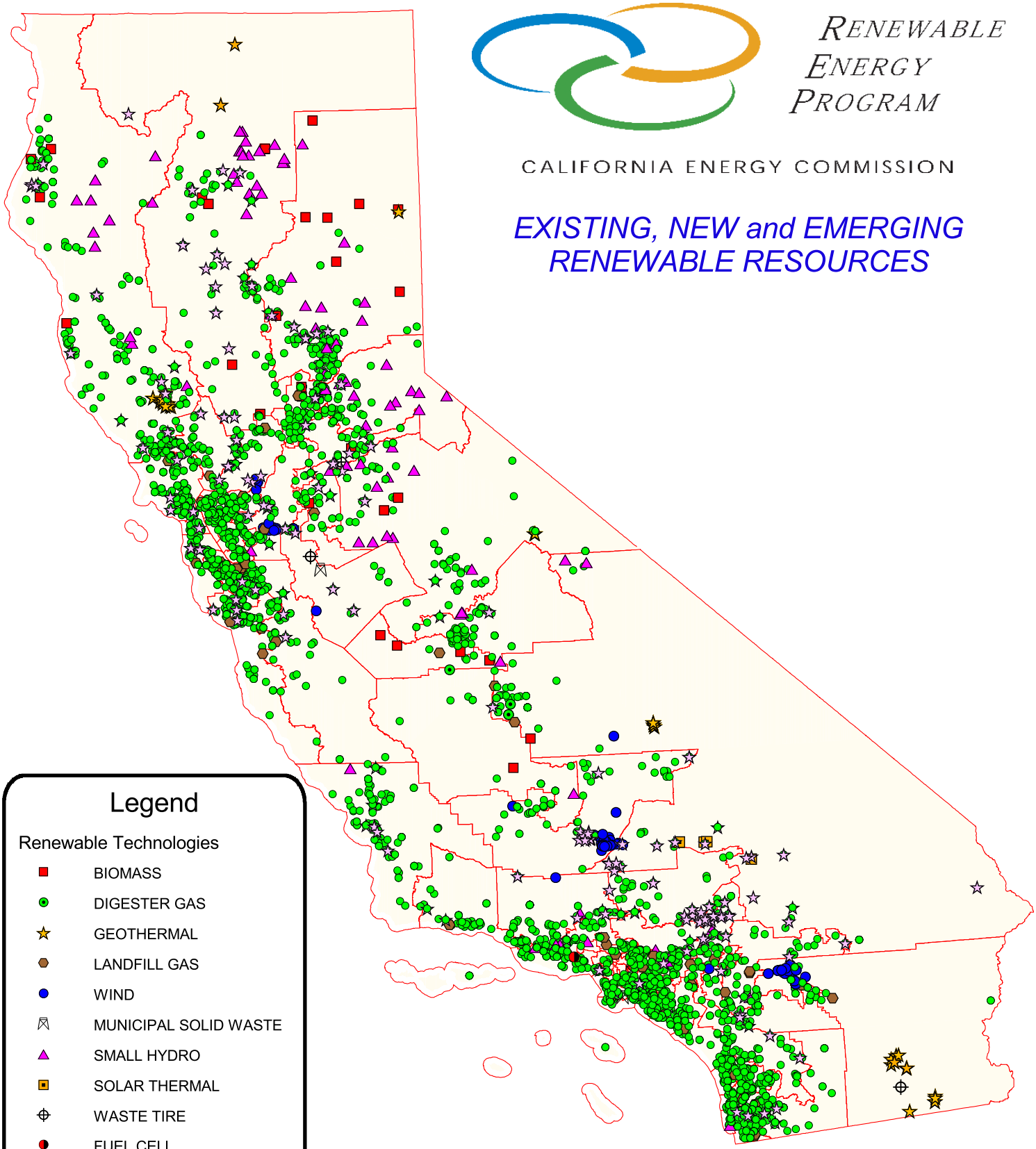
[28] Energy Commission publication number P500-02-068, December 2002.

CALIFORNIA ENERGY COMMISSION

RENEWABLE ENERGY PROGRAM

CALIFORNIA ENERGY COMMISSION

EXISTING, NEW and EMERGING RENEWABLE RESOURCES



Legend

Renewable Technologies

- BIOMASS
- DIGESTER GAS
- GEOTHERMAL
- LANDFILL GAS
- WIND
- MUNICIPAL SOLID WASTE
- SMALL HYDRO
- SOLAR THERMAL
- WASTE TIRE
- FUEL CELL
- PHOTOVOLTAIC
- SMALL WIND
- ASSEMBLY DISTRICTS

Projects Funded by the Renewable Energy Program as of June 2003

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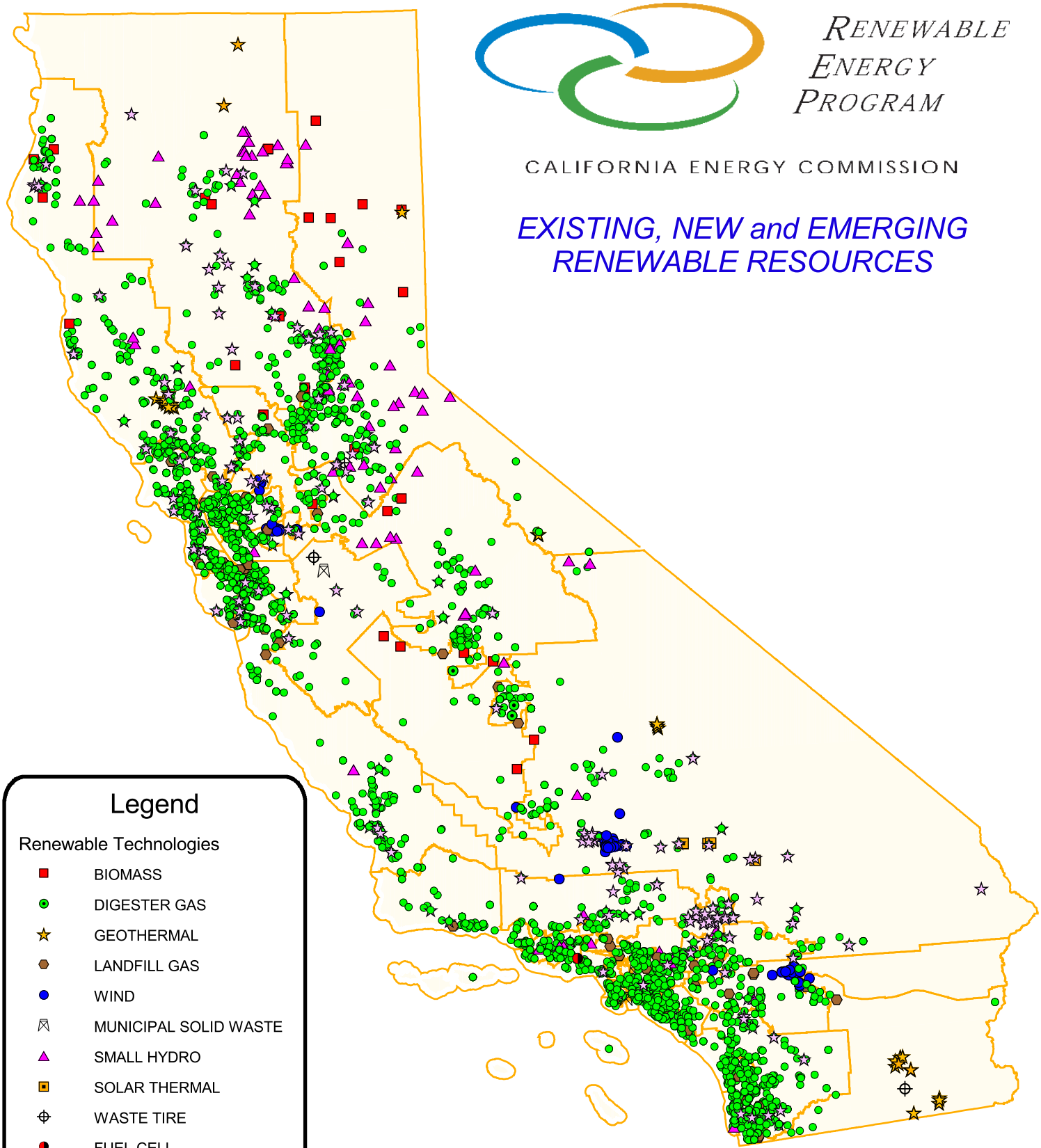
CALIFORNIA ENERGY COMMISSION

RENEWABLE ENERGY PROGRAM

CALIFORNIA ENERGY COMMISSION

EXISTING, NEW and EMERGING RENEWABLE RESOURCES



Legend

Renewable Technologies

- BIOMASS
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- WASTE TIRE
- FUEL CELL
- PHOTOVOLTAIC
- SMALL WIND
- SENATE DISTRICTS

Projects Funded by the Renewable Energy Program as of June 2003

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